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"People Could Pay If They Wanted to"

By DAVID K. BRUNER

Instructor in Sociology, Wharton School of Finance and Commerce, University of Pennsylvania

"HOSPITALS should pay their own way; they do too much free work for those who ought to pay for care."

This is an argument commonly heard when the hospitals ask for more money for free and part-pay beds. "These painters getting fifteen dollars a day go straight to the charity wards when they get sick. They make more money than I do, and when I had my operation—"

And yet the hospitals continue to ask for more contributions and more free facilities. Naturally there is an increased demand in a period of depression, but after all, one is told, the need is temporary: If we build more free facilities now we shall have empty beds later on when the slump is over. So it is argued, but is the need really temporary? One way to answer the question is to see who is actually getting free and part-pay service. Can they afford to pay? What is the family's income? Have they savings that should be used for medical care, and if not, why not? How long does the patient stay in the hospital, and how much does he actually pay?

A study of 595 free and part-pay patients entering the wards of the Hospital of the University of Pennsylvania in January and March, 1930, made by me at the request of Lena R. Waters, director of social service of the hospital, provides an answer to these questions which if not final is probably representative of the situation in hospitals elsewhere. These patients, residents of Pennsylvania, made up half the total 1,200 ward admissions during the two months; a third of the total paid the full ward rate, and the remaining 200 were from outside the state and are not included here. The family rather than the individual patient holds the center of the picture, for it is the family that feels the costs of sickness, and the family is the unit with which the social service worker must deal.

What Patients Paid in Prosperous Times

The early months of 1930 came shortly after the depression as measured by the great crash of the stock market but about a year after the actual business depression, long enough for the slump to have an effect on the families studied. At the same time it may be pointed out that at the height of "prosperity," half the patients in Philadelphia hospitals were receiving free care when the Philadelphia Hospital and Health Survey counted them on December 1, 1928. Add to this figure those who were paying less than $22 per week, and we have three-fourths of the total patients (74 per cent, to be exact) receiving free or part-pay hospital service in the boom period. This of course includes the hospitals conducted primarily for free patients.

Leaving aside the question of whether the ward patients ought to have savings, the fact is that these 595 did not have a rainy day fund. Only 39 reported any savings, under $100 in 23 cases, and under $50 in 16 instances. It is a commentary on the possibilities of statistics that the "average" amount of savings of the group, arithmetically, was nevertheless $114, thanks to a widower with seven children, three of them working, who in spite of being out of work over a year reported savings of $1,000, perhaps hoarded as a burial fund. He was a $7-a-week patient. In 3 out of 5 cases there was a little life insurance, usually of the fraternal or group industrial type. While few of the families had savings, one-half reported debts of varying amounts. The debts were less than $100 for 16 per cent; from $100 to $300 for 19 per cent and $300 or over for 15 per cent. Whether this proportion is high, low or normal depends on the point of view. Considering the family incomes reported, the debts were not surprisingly large.

"Well, these people ought to save; they could if they wanted to," one is told. Now, it is not proposed to settle here the question of saving. It may be noted, however, that the newer gospel of business and of some economists, voiced by no less an industrial prophet than Henry Ford among others, would substitute spending for thrift in the American decalogue. Buy all you can, and the increased volume of sales enables the manufacturer to make savings for you in the form of lower prices, one is told. The validity of the argument need not concern us here; the point is that the duty of consumption is preached to those in the lower income groups as well as to the rest, to street car riders as well as to those who can scan the billboards while the chauffeur minds the highway.

Can the Wage Earner Save?

And if we assume that the wage earner should save, could he if he wanted to? Popular opinion and the various studies of income in the United States differ as to the percentage, but all agree that a certain proportion of individuals have no possibility of saving on the incomes they receive. Estimates of earnings and income by employers' associations and by labor organizations, the snap judgment of the man in the street and the laborious compilations of Paul H. Douglass' "Real Wages in the United States, 1890-1926," are alike in showing that some families have no possibility of saving for emergencies. For a particular group of free and part-pay patients in a particular hospital, Table I, showing weekly family incomes, indicates that saving is often out of the question. The income shown is what would be received if the workers had full-time jobs at the rates reported to the social service department, which means that the actual income is in many cases less. Of the 485 cases for which the income figures are known, 44 per cent report irregular employment, that is, either unemployment or underemployment. The actuality probably exceeds this figure. Income other than wages (usually that from lodgers or from welfare organizations) is an unimportant factor in the total picture.

What the Families Earn

Even so, one family in four gets less than $20 a week, and 44 per cent less than $25. One-third of the total fall within the $20.00-$29.99 class, and the median income (at which point there is an equal number of cases with higher and with lower income) is $26.83. Now at the time of the study the minimum health and decency standard of living for the standard family of five, as determined by the United States Bureau of Labor Statistics and corrected for Philadelphia prices of June, 1930, by the Philadelphia Bureau of Municipal Research, was $1,820 a year or about $35 per week. This figure allows about $50 a year for all forms of medical care, including yearly visits to the dentist, for the entire family. And among these University of Pennsylvania Hospital patients 57 per cent, almost three out of five families, would have less than $35 a week if the wage earners were working full time.

That this plane of living is not unduly luxurious is indicated by some of the items included. The clothing allowance, for example, allows the husband a new winter suit every three years and a summer suit as often; one cleaning and pressing a year; a new overcoat every four years; six collars and two ties a year. His wife gets a new hat each summer and every other winter; a winter coat lasts three years; a pair of high heeled shoes and one with low heels see her through the year, with eight pairs of cotton stockings. Dresses and underwear are made at home. Junior, aged twelve, must make his five shirts last a year, and also his six handkerchiefs. The younger ones, six and two, are similarly provided for. After clothing and food are taken care of, there should be fire insurance, life insurance of at least $7,500, and "some savings." Our $35 per week obviously does represent a minimum health and decency standard, with no provision for major health emergencies.

The income figures are more significant if correlated with the size of the families. Two-thirds of the 77 standard five-member families receive less than $35 per week, and among the larger families the proportion is even greater. To put the matter another way, only one in four of the families with five or more members have incomes of $35 and

more. If the comparison is made on the basis of median income for each size of family (Table II), it is seen that while on the whole income increases with family size, it never reaches the five-member standard. For the 25 families of nine or more members the median is only $28.50; only 6 of the 25 have more than the minimum income for a family of five, and none more than $50 a week. The size of the family is taken as the number in the household, rather than merely parents and their dependent children. The number considered is of course too small to justify conclusions as to the relation between income and large families.

For this particular group, it is obvious that some other solution than family savings will have to be found for the problems of medical care. Saving is for them difficult and in many cases impossible. It is out of the question when the workers have work, but what if they lack steady employment?

The once common belief that no man need lack for steady employment if he is willing to work is slowly going the way of the bison and the Eskimo curlew, although it is not as yet hard to find. Studies multiply which show the extent of involuntary unemployment even in "normal" times and the effects on the families involved. Thus the University of Pennsylvania survey made by Professor Dewhurst at the peak of prosperity in 1928 found one worker in fifteen out of work and one family in seven handicapped directly by underemployment of at least one of its members. The study of the National Federation of Settlements, made in 1928 before the present depression, summarized by Clinch Calkins in "Some Folks Won't Work," shows the effects in actual cases, many of which might have been taken straight from hospital social service records. That the recorded income of the families here studied, small as it is, is in nearly half the cases not regularly received thus represents a condition by no means confined to this group. Unemployment affects our present question both by its influence on the ability to pay for medical care and by its importance as a result and often a cause of sickness. Among the patients themselves, 186 (exclusive of housewives and children under 15) were reported as unemployed, and 143 of these reported sickness as the cause. The unemployment figures are unsatisfactory, however, including as they do several who because of age or illness are properly classed as unemployable.

TABLE I—TOTAL WEEKLY INCOME OF PATIENT'S FAMILY (HOUSEHOLD)

*Weekly Income**	*Number of Cases*	*Per Cent*	*Cumulative Per Cent*
Under $10.00	11	2.3	2.3
$10.00-$14.99	36	7.4	9.7
15.00- 19.99	78	16.1	25.8
20.00- 24.99	87	17.9	43.7
25.00- 29.99	84	17.3	61.0
30.00- 34.99	64	13.2	74.2
35.00- 39.99	32	6.6	80.8
40.00- 49.99	48	9.9	90.7
50.00 and over.....	45	9.3	100.0
TOTAL	485	100.0	

*Normal income when workers are regularly employed. In 44 per cent of these cases, however, irregular or part-time employment is reported. Data are lacking in 110 cases.

TABLE II—MEDIAN WEEKLY INCOME FOR EACH FAMILY SIZE

Size of Family	*No. of Cases for Which Income Was Reported*	*Median Weekly Income*
One	22	$16.25
Two	68	21.76
Three	70	24.00
Four	81	28.09
Five	77	28.96
Six	53	26.94
Seven	43	32.25
Eight	35	32.19
Nine and over.	25	28.50
All reported incomes*	485	26.83

*Including one for which family size is not reported.

There was, for example, the bridge fitter, representing the class of skilled workers, who came to the hospital for treatment of kidney calculus. He would have been making $30 a week if he had not been in the hospital, and if he had had a job; work had been irregular for a year or so. Nevertheless he had managed to save a little. When he entered the hospital his $25 Christmas savings club money was waiting in the bank. He had also $4 cash, making a total of $29 to see him through his illness and take care of the family of six children.

How Unemployment Can Cause Illness

There was another skilled worker, a pipe fitter, thirty-one years with the same company, doing steady work, much of it at night. He was American born and of American descent. He had saved in the approved manner, buying a house through a building and loan association. A year before there had been a change in management. He had been laid off and had been too old to get a job elsewhere. He had not felt well since that time; he had always been too busy

working to cultivate outside interests, and there was no room for a garden plot on the property that he was buying—"nothing to do but worry." The thought of being supported by his sons (steam fitters, against his advice, and barely able to support their own households) was unendurable, and yet his little savings were about gone. Here is a case in which unemployment caused the illness, which was largely a mental difficulty.

Why One Patient "Seemed a Worrier"

Unemployment enters into the situation in other ways. There was, for instance, the mother whose husband had been out of work more than a year, and the family was in debt as a result. The eldest daughter earned $12 a week, and the family had squeezed into one part of the house so that two rooms could be rented to lodgers. The intern recorded, not surprisingly, "Patient seems to be of the worrying type."

Standards of living are going down, beyond any question. The families in this group cut down on food, move into cheaper quarters and take in lodgers or relatives. Patients are told that they need a period of convalescent care, but they cannot take the time from their job, if they still have their job. The same worry over the job keeps a man working until his sickness becomes more serious or operation is unavailing.

The relation of employment to the need for free medical facilities depends partly on whether the patient is the chief wage earner of the family. Two-thirds of these families are dependent on the earnings of one person. Whatever invasion of "man's sphere" may be going on among the writers and the readers of our best magazines, the man of the house is still the breadwinner in these 595 families. Ninety per cent of the families depend on one or two workers, and in a high proportion of even the larger families father is the only one who gets a pay envelope.

One patient in eight is the sole support of his or her family; in other words, one case in eight represents a family in which the income has entirely or nearly ceased. In view of the income figures already given, it needs no imagination to see that help is needed for any sickness lasting more than a day or two, for at this income level, expenditures must be almost entirely for necessities, and the cost of groceries and rent goes on even if the income has stopped. These families are able to obtain little credit at the store or with the landlord. They cannot get far enough ahead of the game to buy a home, and find it hard to persuade the landlord that the rent will be paid next month if he lets them stay.

It is a curious custom to consider that a person who gets a pay envelope is gainfully employed, while another who puts in longer hours at work as strenuous, which would bring in a pay envelope about as large as her husband's if he had to hire her work done, is simply a "housewife." Leaving to the feminists the argument over what constitutes "gainful employment," however, we can say that sickness of the mother disrupts the family situation almost as much as sickness of the wage earner. Over half the total number of patients were in the productive years between fifteen and forty-five and a third were between twenty and thirty-five, not only the most productive age from the standpoint of industry and general contribution to the community, but also the time of life at which there are most likely to be dependent children in the patient's family. On the basis of family position, 22 per cent of the patients were fathers, husbands or other male heads of their families; 31 per cent were "the woman of the house"; another 31 per cent were children, and 6 per cent were "unattached." The remaining 10 per cent were uncles and aunts, grandparents, "in-laws" and others. It is worth noting that while 110 (over 15 years) were single, only 35 were unattached individuals.

When the Mother Is Sick

The sickness of the mother can be tided over if it is short and occasional, just as the family finances can be managed over a short illness or lay off of the wage earner. The older children may be able to manage the housekeeping after a fashion till the mother is well, without a serious interruption of school attendance. Kind-hearted neighbors or relatives may take the younger children for a few days, or provide meals for the father if he does not go to a restaurant. Longer or repeated illness is another matter. For example, there was the Italian woman who came to the hospital accompanied by a friend who explained that things were all right, since she and another neighbor were taking the children until Maria came home and that the social service worker need not worry. Several weeks later Mrs. Vittorio came in for another period of treatment, and she came alone. The neighbors had again been persuaded, this time somewhat reluctantly, to care for the children. When she had to come to the hospital the third time, part of the necessary arrangements included the social worker's placing all three children. Half the gynecologic clinic out-patients fail to report for operations recommended, and the visiting social worker finds that the reason is inability to pay for someone to take care of the children during the woman's absence. When the disease is carcinoma, as it too often is, the time

when an operation might have saved one more cancer victim has often passed.

It may be assumed that for illness of over a week something more than a makeshift arrangement must be made in the typical family. The length of time these patients stayed in the hospital was divided into periods of a week or less, eight days to four weeks, and over four weeks. The patients staying less than a week (many of them children requiring tonsillectomy) made up 29 per cent of the total, leaving more than two-thirds (of all ages) who were in the hospital longer than one week. Those staying longer than four weeks made up 8 per cent of the total. Inclusion of patients still in the hospital at the time of the study would raise the proportion receiving care for the longer periods.

What These Patients Were Asked to Pay

The following factors all have a bearing on the main question of the need for free and part-pay hospital facilities: income, savings, employment, the position of the patient in the family and the length of stay in the hospital. One other point of information is pertinent: How much were these patients asked to pay, particularly in relation to the length of care they received and to the family income?

Of these 595 free and part-pay patients, 62 per cent were given free rating. The free patients comprise 37 per cent of the total number of Pennsylvania residents (information not being secured on nonresidents) admitted to the wards during the two months. When a charge is made, the rate is usually either $7, $14, or $21 per week, rather than an intermediate amount. Of the 595 patients, then, as stated, 62 per cent were rated as free; while 21 per cent were rated at $7 per week, 11 per cent at $14, 3 per cent at $21, and 3 per cent as "part pay," the amount being unspecified.

Rates and Incomes

If the patients are grouped according to length of stay in the hospital, the classes are too small for conclusive results but indicate a somewhat higher proportion of free rating among those under care for the longer periods. In some cases the rating is changed, usually downward and more frequently when the stay is prolonged. What proportion of the charges eventually remain unpaid it is impossible to say. It is safe to state that the actual income received by the hospital from this group of patients is somewhat below that indicated by the ratings.

When we consider those rated at $7 or less with regard to the family income we again find groups too small to be conclusive, but three-fifths of the 108 had incomes of from $15.00 to $29.99, with the highest concentration at about $25.00. Of those rated at $14 per week, 27 of the 62 had family incomes below the standard $35 for a family of five.

The data on 595 cases in a single hospital will not justify final conclusions on the questions raised at the beginning of this article, but they do shed some light on the question of the need for free and part-pay hospital facilities. They indicate that a large number of families cannot be expected to provide for the emergencies of illness out of savings because the total income is too small to permit laying by any substantial amount. Taken in conjunction with employment studies of prosperous as well as bad times, they suggest the continuing need for hospital care that will provide for a group that cannot be expected to pay the present full ward rates. Experts and others may differ as to the proportion of the population who belong in this group, but it is evident that the actual number involved is large and that the need is permanent and not a temporary result of the present business depression.

Adjusting the Household to Illness

It is not alone a matter of income, which in these cases would be low even if the workers had full-time jobs, and in almost half the cases they did not. Seven patients out of ten (including children) were in the hospital for more than a week, entailing, if the patient was either the breadwinner or the "home-maker," more than a temporary makeshift adjustment in the household. In other words, a stay of more than a week in the hospital will probably involve extra expenses at home, in addition to the hospital charges if any are made. If we consider that 57 per cent of the families for which income is reported receive less than the $35 a week which would provide a minimum health and decency standard of living in Philadelphia at the time this study was made, and that one patient in eight is the sole wage earner of his family, it becomes clear that these particular families are not being "pauperized" through receiving without charge medical services for which they could easily pay.

It is difficult to say whether on the other hand the charges to part-pay patients, small though the amounts may be, are found unduly burdensome in relation to family incomes. For one thing, the question is one of opinion, and much depends on the relation of income to size of family in the individual case. If we make all due allowance for varying family size and for the comparatively small number of cases involved, it still is evident

that hardship must be produced in many cases. Thus of the patients charged $7 or less a week, 68 per cent have family incomes of less than $30 per week, while 44 per cent of those charged $14 have family incomes below the standard $35. In this connection the proportion of unpaid charges would be significant.

All in all, the study indicates the great need of medical care for those who cannot afford to pay even a nominal charge, a need that is not temporary but permanent. The hospitals cannot be expected to bear this burden alone. City and state must make more adequate provision if the need is to be met. While the plan of part payment is entirely justified and even necessary, a composite picture of this group of patients in the University of Pennsylvania Hospital indicates the propriety of a general policy which will seek a solution of the problem not by extending the burden of part payment further among the patients of the lower income group, but by making strenuous efforts for increased support of hospitals through taxation, an aspect of the question likely to be overlooked in discussions of the cost of medical care.

The Folly of Underitemizing the Patient's Bill

Editor, THE MODERN HOSPITAL:

The January, 1932, issue of THE MODERN HOSPITAL is a fine one. Indeed, it seems that each succeeding issue is better than the one before. May I take issue, however, with the writer of the paragraphs entitled "The Folly of Overitemizing the Patient's Bill," in which he expresses a rather strange viewpoint?

It would seem, from what one hears from the hospital executives and their associates in practically all of the hospital meetings and conventions in this country, that many have a mental complex regarding the matter of hospital charges. They all appear to be suffering from a wrong mental attitude on this important subject. The idea seems to prevail that the charges are too high, and many entertain the fear that the patient will object to the bill. They give out the idea that the statement is presented to the patient in a rather apologetic manner and presented to him on his blind side.

It seems to me that "The Folly of Overitemizing the Patient's Bill," gives an entirely wrong idea; and that idea is entirely contrary to good business methods, and cuts diametrically across the American plan of business operation. Why, then, should hospitals do differently? Why should they seek to cover up, or "duck under," when it comes to honest, legitimate charges for service rendered or for materials used in caring for the patient? Why should not the hospitals have their bills itemized in plain English, so that the patient, yes, even the most uneducated, may look at his bill and know exactly what he is or is not paying for?

It is true that we must exert a faithful effort to minimize the patient's expense. But what hospital worker will go to a convention in Toronto, put up at the Royal York for a week and pay a bill that is made up on the idea and plan set forth under the aforementioned caption? The American people want to know just what they are getting and what they are paying for when they pay out a dollar nowadays.

Including drugs in the room rate is the wrong plan. It will lead to higher room rates than are necessary. The better plan is to keep the room rate just as low as possible, and if the patient has to have drugs and extras let him pay for them.

The greatest thing needed is for hospital workers to get the right attitude. If we discount our services, of course the public will do likewise. Too many hospitals to-day are bankrupt because of their loose, unbusinesslike methods. We need to educate the public to realize that we expect our services to be paid for. It is not an act of charity or philanthropy to educate the people to "hop" a doctor or a hospital bill. So please run these few remarks under the heading, "The Folly of Underitemizing the Patient's Bill."—*R. J. Brown, Manager, Boulder-Colorado Sanitarium and Hospital, Boulder, Colo.*

Continuing the Rosenwald Programs of Philanthropy

With the close of the year ending June 30, 1931, the Julius Rosenwald Fund had paid on its programs of philanthropy a total of $2,475,455, according to a report of the year's work which is now available.

The chief activities for the year were:

Demonstrations of pay clinics and of hospital service for persons of moderate means, and studies of medical economics.

Contributions to the study of social problems, especially in the South.

Gifts to a few experiments in general education and child development.

Contributions to Negro high schools and state and private colleges and to other aspects of Negro welfare, especially health.

Cooperation with Southern states and counties in the building of 256 public schools for Negroes.

Ten Years of Laboratory Progress in a 100-Bed Hospital

By F. P. McNAMARA, M.D.
Pathologist, Finley Hospital, Dubuque, Iowa

IN PREVIOUS papers[1] the development of the small hospital laboratory and museum was considered. In one of them a report of the amount and character of the work done over a period of eighteen months was included. The present paper tells of the actual progress in the development of the laboratory and museum at Finley Hospital, Dubuque, Iowa, and includes a report of the work done over a period of ten years. Many reports on the number of examinations done annually are available but as far as is known no report covering a period of ten years has appeared in the recent literature.

Such a report seems desirable as it will give a better indication of the average amount of work that is required in a 100-bed hospital. Furthermore, though it is true that clinical pathologic work is the laboratory's first concern, it is likewise true that the laboratory has served as a stimulus, direct or indirect, in bringing about improvement in all the services rendered by the hospital. For this reason I shall describe some of the activities of the laboratory not directly concerned with the care of patients. While they are not necessarily duties of the pathologist, they are likely to fall on his shoulders, especially in the smaller hospital.

Serves a Scattered Community

Finley Hospital is one of two general 100-bed hospitals in a city of 42,000 population. Patients come from the surrounding towns and country and it is estimated that the two hospitals serve a population of 65,000. It has a training school for nurses with an average of fifty pupils and eight supervisors. There is a staff of thirty-five physicians and dentists, but any reputable physician who

From his comfortable attractively furnished private office the director administers the various laboratory activities.

REPORT OF FINLEY HOSPITAL LABORATORY OF PATHOLOGY AND BACTERIOLOGY, JULY 1, 1921 TO JULY 1, 1931

Hematology	*In-Patients*	*Out-Patients*
White blood cells	10,136	1,308
Red blood cells	1,627	666
Hemoglobin	2,964	731
Differential	956	547
Coagulation	2,703	32
Bleeding time	1,348	14
Typing	301	150
Direct matching	305	83
Icterus index	46	14
Chemical and Morphologic Examinations		
Urinalysis	29,315	3,954
Blood chemistry	1,206	425
Sugar tolerance	21	2
Basal metabolism	218	413
Spinal fluid, routine	112	74
Exudates and transudates	84	46
Gastric contents	227	69
Feces, routine	127	88
Alcohol determinations	2	96
Milk, chemical	6	5,551
Ice cream	0	1,804
Breast milk	5	41
Protein tests	11	208
Miscellaneous	65	185
Serology		
Complement fixation, blood	2,383	4,381
Complement fixation, spinal fluid	112	97
Bacteriology		
Urine, cultures and smears	769	254
Diphtheria cultures	75	16,908
Miscellaneous cultures	1,073	1,206
Sputum	1,030	832
Gonococcus smears	128	2,731
Vincent's angina smears	25	273
Blood cultures	165	50
Agglutinations	32	85
Water cultures	15	3,100
Milk cultures	6	5,731
Ice cream cultures	0	1,754
Feces cultures	26	18
Animal inoculations	25	35
Malarial parasites	35	55
Dark field examinations	0	24
Autogenous vaccines	34	57
Pathologic Anatomy		
Microscopic tissues	3,885	401
Gross tissues	4,647	32
Necropsies	124	79
TOTAL	66,374	54,604
GRAND TOTAL		120,978

conforms to the rules is allowed the use of the hospital. The hospital is supported by income from patients, by a small endowment fund and by contributions and bequests from interested individuals or groups. Approximately 10 per cent of the income is derived from the last two sources mentioned.

In addition to the two general hospitals there are in the city one sanatorium for nervous and mental cases and another for tuberculous patients. They have a combined average daily capacity of 236 patients, while that of each general hospital is sixty-five.[2] Because of the rather small number of available hospital beds it will be recognized that the work of the two general hospitals will be limited. Aside from that limitation Finley Hospital is representative of the average 100-bed hospital. With these facts as a background let us now consider the work done by the laboratory over a period of ten years. The accompanying table shows both the number and the character of the examinations.

Over 12,000 Examinations Made Annually

The broad scope of the work is evident from the table. Over 12,000 examinations were made annually, an average of forty each day in the year; 66,374 examinations (55 per cent) were made for resident patients, an average of between five and six tests per patient; 13,564 examinations (11 per cent) were made for out-patients, and 41,040 (34 per cent) were done for the city and county of Dubuque. The character of the work aside from the large number of bacteriologic examinations, many of which were a part of public health work, is quite typical of what should be done in the 100-bed hospital. The importance of the work in regard to facilitating correct clinical diagnoses is obvious but its bearing on pathologic anatomy should be emphasized.

Microscopic examination of tissues removed at operation is a recognized procedure in all accepted hospitals. Theoretically, a surgeon of broad training and experience should be able to make a shrewd, naked eye diagnosis of most lesions encountered, but this is not true of all who do surgery. Many are none too familiar with the appearance of normal organs to say nothing of those affected by disease. Therefore the naked eye diagnosis should be supplemented by a histologic examination in all hospitals, but especially in the smaller ones where physicians with more limited experience usually practice. Probably in 25 per cent of the cases entirely unsuspected diagnoses are made by the microscopic examination of tissues. That such studies are needed in the smaller hospital is evidenced by the number of examinations (4,286) that we have made. This work required

the preparation of over 1,200 microscopic slides annually, and these have become a permanent record as to the accuracy of the anatomic diagnoses. The value of surgical pathology is obvious, but even more valuable are the postmortem studies.

The value of the necropsy to the family, to the community, to future patients and to physicians has been pointed out so often that it need not be repeated. Let it suffice to say that the importance of necropsies is such that the percentage done in a hospital, large or small, is a good index of the efficiency of the medical staff of the institution. It is an indication of the intensity of the desires of its members to increase their medical knowledge and to improve their judgment. Only the physician who thinks he knows everything about medicine can afford to neglect the necropsy. As emphasized by Christian,[3] "such an individual has ceased to progress, fails to realize his diagnostic deficiencies and lacks many of the qualities that make up the best type of a physician."

It will be noted that Finley Hospital had 203 necropsies in this ten-year period, an average of twenty a year. In spite of persistent efforts to stimulate more interest the number has not increased markedly, but the type of case in which necropsy is performed has changed. In the first few years most of the necropsies were performed in accident cases or in cases of sudden death in which little was known of the individual's past history. While such cases are important they are not nearly as valuable as cases that have been thoroughly studied. In the last five years the number of necropsies of the latter type has increased considerably. This has not been due to any general increase of interest, but rather to the interest of four men who have been responsible for 60 per cent of the necropsies.

In this connection, it might be suggested that if the necropsy percentage is accepted as an index of the efficiency of the medical staff it would be well for every hospital to publish the records of each staff member as regards the number of patients, the number of deaths and the number of necropsies. Such a report would indicate the efficiency of each member of the medical staff. The pathologist believes that the necropsy studies are his most valuable contribution toward the advancement of medicine.

The Finley Hospital museum contains over five hundred unusual mounted specimens, most of them in natural colors.

The Finley Hospital laboratory was instituted about thirteen years ago, but as no records were kept until 1921, it may be said that its development began then. At that time the laboratory occupied a single room in the basement of the main hospital building. The work was directed by a well trained technician, one with vision but who lacked the M.D. degree and therefore was definitely handicapped in his endeavors to improve the service

rendered by the laboratory. The equipment consisted of a microtome for frozen sections, a centrifuge, an incubator, a refrigerator and a few test tubes and graduates. Only the most elementary tests were made and microscopic tissues were sent to a neighboring city for examination when requested by the surgeons. Probably not over twenty-five specimens were examined each year.

With the advent of a full-time pathologist, the work immediately increased greatly in amount as well as in scope and, what is possibly of more significance, has continued to increase ever since. As the work expanded, three rooms in the basement were taken over and the remaining rooms were utilized by the x-ray department. With the growth of each department under the direction of full-time physicians, the need for more commodious quarters became pressing and it was decided to move the laboratory to the building it occupies at present.

Museum Contains Over 500 Specimens

The main laboratory occupies one-half the first floor and there are special rooms for incubators, for sterilizers and for supplies. The other half is utilized by the record librarian and for staff meetings. On the second floor are rooms for the director's private office; the library; for photography and for the museum. The laboratory is equipped to do any of the standard procedures of clinical pathologic work as well as a limited amount of investigative work on material received. In 1928 the laboratory was placed on the approved list of clinical laboratories by the Council of Medical Education and Hospitals of the American Medical Association. The accompanying illustrations give a better idea of the present equipment than words, but some mention of the museum and library should be made.

In a former paper I advocated the development of a museum in every 100-bed hospital. That this statement was not too visionary is shown by the growth of the Finley Hospital museum which now contains over five hundred unusual mounted specimens, most of which are in their natural colors. The importance of the museum lies in the fact that it illustrates in a way tangible to any educated person some of the basic facts of medicine. The specimens are used to teach nurses gross pathology. They enable doctors to continue their study of pathology which was only begun in medical school. The interested physician can correlate the clinical history and the gross and microscopic pictures of the lesions, thus increasing his medical judgment. The specimens are also used to illustrate scientific papers before medical groups, thereby adding much to the general interest. As some of the papers are worthy of publication the desirability of illustrating them with gross and

The main laboratory, occupying one-half of the first floor, is equipped to do any of the standard procedures of clinical pathologic work.

The photography room is equipped for taking both gross and microscopic pictures for illustrating medical articles.

microscopic pictures became apparent and encouraged us to equip a room for photography. Later we hope to prepare illustrated folders including the essential clinical and pathologic data to be used with the museum specimens for teaching purposes, as advocated by Felsen.[4]

No modern hospital is complete without a good reference library. The student in medical school has the advantage of having well equipped libraries available. If he desires to refer to an article or a series of articles, the librarian searches them out and presents them to him. In a community without a medical library, the difficulties of finding a special article are often so great that the physician may give up the search in despair. It is true that he can obtain package libraries from the American Medical Association, the American Hospital Association or from his state library, but the extra effort required is frequently "the straw that breaks the camel's back."

With the awakening of scientific interest which followed the development of our laboratory and in order to make the recent medical literature easily available to those in need of it, it was decided that a hospital library was necessary and it fell to the pathologist's lot to meet it. The members of the medical staff furnished a suitable room and donated cabinets, magazines and books. We now have almost complete files of twenty-seven different magazines, several hundred reprints, many reports of scientific societies as well as 500 medical volumes to which additions are being made constantly. As many duplicate magazines have been received, we have started a package library in which papers on various subjects are collected. Thus the physician can quickly obtain a comprehensive review of the recent literature on a particular subject. The value of such a reference library is obvious. Other similar services may be rendered by the pathologist in the smaller hospital, though they are not directly concerned with his duties. Among them might be mentioned those related to the nurses' training school and to the medical staff.

The crowded curriculum of the modern training school taxes the teaching facilities of the smaller

hospital to the utmost. As most physicians connected with such institutions are without training in presenting lectures, the services of one with special training, however incomplete, will be in demand. The pathologist falls into this group and will be expected to give lectures in pathology and bacteriology. As is the case at Finley Hospital, he may also be called on for lectures on other subjects, such as general medicine and diet in disease. Our laboratory has devoted 150 hours to lectures and laboratory work in addition to the time spent in the preparation of the lectures and the demonstration material. Another type of service the laboratory provides for the training school is that concerned with the prevention of disease among the nurses by aiding in its diagnosis. Each nurse is inoculated against smallpox, typhoid and diphtheria, and over 500 laboratory examinations are made each year for members of the training school.

I have already referred to the necropsy as the best single means by which the pathologist can bring about improvement in medical diagnosis and judgment. Another service he can give to the staff is that of acting as consultant in the hospital. Almost daily consultations are held on patients or on some phase of the hospital activities. The pathologist also aids in improving the medical care in the hospital by making statistical reports on the treatment in special types of cases and on the results obtained. Such reviews are essentially a form of bookkeeping as to our medical assets and liabilities. They suggest methods by which the medical care of the sick can be improved. Finally, the pathologist because of his studies attends the staff meeting prepared to make the conference more interesting. By his example he stimulates a more scientific attitude toward the practice of medicine.

From the foregoing statements it should be clear that the work of the pathologist in the 100-bed hospital is not limited to clinical pathology; that in considering the worth of the laboratory to the hospital consideration should be given to what may be termed "outside" activities.

How Finances Are Handled

I believe that the laboratory income should be sufficient to meet all expenses and to allow for reasonable development. Our income, which has more than conformed to this rule, has been derived from three sources: (1) from out-patients; (2) from patients from the city and county of Dubuque for whom public health work has been done, and (3) from resident patients. In this connection it might be emphasized that the small hospital laboratory must depend for a considerable portion of its income on outside work. An arrangement such as ours for doing the public health work is of mutual benefit to the hospital and to the community. It is one method by which each community can obtain the services of a trained pathologist.

For resident patients we consider as most suitable to our laboratory a routine fee of five dollars plus a moderate charge for special examinations, such as microscopic tissues, blood chemistry and basal metabolism tests. We have given some consideration to a flat rate for all hospital services but we do not believe that it is feasible at present except on the obstetric service. One of the difficulties of the flat rate method of charging is that no provision is made for the activities of the laboratory aside from that of clinical pathologic work. These outside activities are nonrevenue producing and yet have a considerable value to the hospital. Among them may be mentioned the necropsy services as well as those given the training school.

What a Necropsy Costs

Bluestone[5] quotes Turner as having estimated the cost of a necropsy as being between ninety and one hundred dollars. Evidently this was in a large hospital where more complete studies were made than is usual in a smaller hospital. We have estimated our individual necropsy cost at approximately fifty dollars and therefore the annual cost will approximate one thousand dollars. The estimate is based on the time spent and the cost of the materials used in performing the necropsy, in the preserving and mounting of specimens and in preparing microscopic slides, pictures, lantern slides and reports.

In regard to the services rendered by the training school, we do not believe that similar efforts in any other educational field could be obtained for less than one hundred and twenty-five dollars a month. These points are emphasized because these services are often only vaguely appreciated by hospital administrators and by the public. They are apt to be forgotten when the value of the laboratory is considered or when annual statements of income and expenses are made. Any fee system devised must take them into consideration if the laboratory services are not to become atrophied.

The work of our laboratory has been carried on by the director and two technicians. We believe that this is the minimum personnel required to continue the work we have been doing. Furthermore, preparation of all material suitable for publication would require additional assistance. No one knows how much has been lost to medical science because the smaller hospitals, which care for at least one-fourth of the patients in this country,

have failed to contribute in any great amount to medical literature. One reason for this is that most small hospital authorities have lacked vision concerning the possibilities of developing their laboratories and as a result they are usually understaffed.

Moore[6] has made a study of the personnel required to staff the clinical laboratories of various sized hospitals adequately. He states that the fifty to 100-bed hospitals require only "a visiting pathologist who should call for a short time daily or at least three times a week; one full-time technician and a part-time intern." Moore's studies probably only confirmed what most small hospital administrators already believed. In other words, they are satisfied with a low standard of laboratory service. With such a personnel, the hospital will merely meet the demand for a laboratory; it will never be developed to its full usefulness. I have outlined some of the activities by which the pathologist tends to improve the services rendered by the hospital. These activities require his constant attention and if his interests are divided the hospital will not benefit as it should. Such activities are even more necessary in the smaller hospital than in most larger ones.

How to Get the Most Out of the Laboratory

The amount and character of the work done in our laboratory are fairly representative of what should be done in the average 100-bed hospital. It is tangible evidence that the laboratory is fulfilling its primary function, that of aiding in the diagnosis and rational treatment of disease. The mere doing of the tests by automatons would result in some improvement in diagnosis. Frequently the smaller hospitals are satisfied with a slight degree of improvement rather than insisting upon the maximum that should result from the laboratory studies. The maximum improvement will be obtained only when the laboratory is developed under the direction of a full-time, consulting pathologist who is on a par with the clinicians and who has an adequate number of assistants.

The importance of the second function of the laboratory, that of elevating the standard of medical practice, has not been generally appreciated by small hospital authorities. As a whole, they have been content with essentially the same type of practice that is carried out in the patient's home. They have made only feeble efforts to create scientific institutions, which the modern hospitals are supposed to be.

I have indicated how the pathologist by various methods creates a scientific atmosphere throughout the hospital and incidentally in the community. These services are definite assets to the hospital and to the community it serves. Any evaluation of the worth of the laboratory must necessarily take them into consideration. When they are taken into consideration, I believe that laboratory services will be found to cost less for actual value received than any other type of medical service.

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Hospitals Urged to Apply for Fire Inspection Services

The committee on fire insurance rates, which presented a report at the meeting of the American Hospital Association in Toronto, arranged with the National Board of Fire Underwriters after the Cleveland Clinic fire to make a thorough inspection of every hospital in America that permitted or desired it, with a view to reducing hazards to life and property.

Thirty-six inspection bureaus of the National Board of Fire Underwriters have inspected 3,500 hospitals; there is not a single instance on record where this inspection was made and where the recommendations were put into effect that has not resulted in a marked reduction in fire insurance rates, in addition to the lessened hazard.

Dr. L. A. Sexton, superintendent, Hartford Hospital, Hartford, Conn., chairman of the committee, comments as follows:

"It has been a wonderful piece of work. The committee has not done any of it; it has all been done by the National Board and has cost it more than $300,000. If every hospital was not inspected, it is the hospital's own fault; it may be inspected yet if it has not been done.

"We have never had a piece of work in the form of a contribution to the hospital field that could compare in any way with this colossal piece of work. A detailed report has been made of every inspection. These reports in many instances run up to fifty and a hundred pages. These reports were made for the benefit of the individual hospital. The National Board of Fire Underwriters states that it has taken a great deal of pleasure in being able to make this contribution to the hospital field. It has been a wonderful piece of work, and if superintendents have not yet taken advantage of it, I do not think it is too late."

Where Out-Patients Represent a Small Source of Revenue

By ALBERT G. ENGELBACH, M.D.
Assistant Director, Massachusetts General Hospital, Boston

IN THE combined out-patient department of the Massachusetts General Hospital and the Massachusetts Eye and Ear Infirmary, Boston, there are three departments that are closely allied with the care of patients—the apothecary department, the optical department and the orthopedic workshop. Each of these departments is so operated that it at least pays for the cost of its operation.

During the past year the apothecary unit filled 99,512 prescriptions, an average of 329 prescriptions for each day the out-patient department was open.

Three Paying Departments

In order to handle these prescriptions quickly, a formulary was devised. The prescriptions that are used most frequently in each department were gathered, compiled and submitted to the entire visiting staff for approval. Each prescription was assigned a number, so that instead of writing the prescription in full each time, the physician needs only to write the number, together with such directions as he has given. An adequate supply of all numbered prescriptions is made and packaged at a time. This allows the work to be arranged on an orderly basis.

The use of the formulary not only saves considerable time in the filling of the prescriptions but it removes the necessity for the apothecary to carry a large stock of trade-marked brands of the same combination of drugs as that on the formulary. Larger stocks of drugs are purchased at a time and with a substantial saving in cost. All drugs are compounded in the out-patient department apothecary unit, except compressed tablets which are purchased as such.

Although drugs are sold for less than they would cost outside, they return a small profit to the hospital.

During the year 13,115 visions were tested in the eye clinic. An extra charge is made for this examination, which provides some surplus over the cost of this section.

Prescriptions for lenses and repairs numbered 11,090 during the past year. This unit is in charge of a competent optician and two assistants. All prescriptions for lenses are carefully checked. A considerable stock of the more commonly used lenses are carried and the glasses are delivered promptly. All lenses not carried in stock are supplied through a local optical supply company. The final edge grinding and polishing are done in this unit. A number of standard types of frames are carried in stock. The cost of frames depends upon the type and quality chosen.

With each pair of glasses delivered, a case is included. Within the case is placed a small sticker which reads as follows: "Will the owner of these glasses please return to the optician for their adjustment at the end of two weeks from the date of purchase. There is no charge for this service."

Glasses are sold for less than they would cost outside, but they, too, return a small profit to the hospital.

The orthopedic workshop during the past year completed 2,296 orders. This unit makes all types of braces and appliances ordered by the physicians. These appliances are sold to the patient at a small profit, but in each case at a lower cost than they could be obtained outside the hospital.

Aims of the New Canadian Hospital Council

The Canadian Hospital Council, recently organized, has outlined its aims as follows: to coordinate activities of hospital organizations in Canada; to study hospital problems and the relationship of the hospital to the public; to cooperate with other agencies; to study hospital legislation in Canada; to form a nucleus from which may be formed later a Canadian Hospital Association if in the future such a development should be deemed advisable.

Dr. Fred W. Routley, Toronto, is the president of the council and Dr. George Harvey Agnew, Toronto, secretary.

What Is She Like, the Ideal Dietitian?

By FRANCES BERKELEY FLOORE
Director of Dietetics, and
CHARLES A. WORDELL
Manager, St. Luke's Hospital, Chicago

TO MANY persons the term "dietitian" conjures up a mental image of an individual who will make us eat raw carrots, spinach and whole wheat bread, prolong our life but take the joy out of living (and who wants to live long anyway?), serve us calories instead of food, vitamins instead of seasoning and eventually standardize our meals until we are eating food served in pill form with a glass of water thrown in for good measure.

Cooking has been classed with the arts because it pertains to one of the senses. Until very recently we were concerned only with the immediate effects of food—whether or not its effect on our palate was pleasurable, indifferent or disagreeable. If the food was properly seasoned it was pleasing to the taste and if to this was added a colorful, attractive service, with cheerful surroundings, congenial companions and ready wit the food was even more to our fancy. Eulogies were written to the chef who conceived these concoctions; he had audiences with kings and became a personage in the world of the epicurean. His was an art similar to the art of the poet whose sonnet charmed the ear and the art of the painter whose canvas fascinated the eye and enriched the soul.

Countries became famous for their excellent cuisine, France having the enviable honor of heading the list. The qualities necessary for a good chef took much the same degree of sensitivity as that required to create a symphony,

except that one pertained to the sense of hearing and the other to the sense of taste. The effects of the two, however, were different in their results. A song pitched to the wrong key has only, so far as we know, an irritating effect on the nerves but the ultimate effect of even the most perfectly seasoned food is neither on the palate nor on energy but is more far-reaching than either of these.

The Far-Reaching Effects of Food

Certain foods, or their absence, may cause our growth to be stunted, may hinder our vision or bow our legs. This remarkable, comparatively recent discovery has upset all our theories regarding food and has given us an entirely new perspective whereby we may judge our food habits and tastes. It has also shown us the necessity of ascertaining the physiological facts concerning food in order that we may have some basis for our theories. These facts are originating in the research laboratory and in the experimental field. Sometimes they are discovered quite by accident. Regardless of the method of discovery, however, they will be based on science and not on art, although art will be necessary in applying the knowledge thus gained.

If the effect of food was so far-reaching and if its purpose was to do something more than to satisfy the taste and provide energy, then we could not depend on the creations of the chef to nourish us properly. And if we could not depend on him, then who would see to it that we were served food that would keep us in the best of physical condition? There was no one who could do this except perhaps the doctor or the chemist, neither of whom knew anything about cooking since each had his own profession and did not concern himself in any way with food problems and their solution.

The Hospital—The Dietitian's First Stronghold

Someone had to assume this responsibility, someone with an understanding of the laws of chemistry, an understanding of elementary and advanced cooking and a practical working knowledge of psychology to be able to deal with both the sick and the well. The person choosing such a profession was given the title of dietitian. In addition to these scholastic essentials, she had to have certain innate or acquired characteristics: an interest in people and a desire to promote their welfare; a disposition that would keep her from becoming too often discouraged over events that were certain to occur; an enthusiastic interest in every phase of the diet, whether it was the more prosaic tasks, such as that of supervising the dishwashing, or the more elevating one of tracing the glucose tolerance curve of the diabetic.

If the dietitian is going to assume as her job the proper feeding of the masses, then she must do this in such a manner that the foods formerly included in the menu will not be missed. There are many foods such as salads, fishes, fruits and cheese, whose appetizing superiority cannot be questioned, and whose nutritional qualities are equally unquestionable. But to enlarge upon this list will require assiduous research by every dietitian.

Since food has a more direct effect on the sick than on the well, the dietitian was first placed in the hospital where her services were most needed. To this have been added many other fields of endeavor, but the hospital still offers the broadest scope of service. Here she has to feed not only the sick, although they are her immediate problems, but also those who are employed in caring for the sick. Anyone who is working for the hospital is therefore at the mercy of the dietitian three times every day, or whenever food may be served.

Satisfying Both the Sick and the Well

A great deal is said about keeping patients satisfied. Such a task is intriguing. The private patients are paying, sometimes a costly figure, to be cured expeditiously and enjoyably. Everything is done to keep up the private patient's morale, and even special dietitians are delegated to carry out his food requests. Often we find that he has a history of "epicureanism" over a period of many years and that he has a propensity for giving advice regarding his food and its preparation. He presents a genuine problem. The patient and his tastes must be satisfied (the dietitian's job is at stake!), the doctors' orders must be carried out (sometimes regardless of the patient's whims and fancies) and peace must be maintained at any cost. Ingenuity is required to select dishes that will meet the approval of the gourmet and the physician alike.

Mealtime in any hospital is one of the most interesting times of the day. To the patient in the ward it is particularly interesting, especially if he is not acutely ill. This is true because his day seems longer since his visiting hours are limited. He is often not used to leisure and does not know what to do with it when he has it. Frequently worry relative to finances, family and his illness may cause him to spend many fretful, restless hours. His diet should receive the earnest attention of every dietitian who is called upon to serve him. Every attempt should be made to give him food that will build up not only his nutritional

state but that will be conducive to a happy frame of mind, so that his trays will be the "looked forward to" event of the day.

Then, there are the intern and the nurse to be considered. What effect has food on their well-being and what considerations should they be given? Should their food be planned for its nutritive or its economic value, and are these the only considerations? Does it make any difference to them whether or not the day is started with a satisfying meal? Does this, in turn, have any effect whatsoever on the quality of their work or even on the mental attitude of a patient? If, when a nurse enters a room with a tray that is all that could be asked for in service and quality, she confides to her patient that she had an "awful dinner," will she not unconsciously transfer to the patient some of her displeasure, her irritability and her feeling of grievance which will make the tray less satisfactory to the patient? We hear a great deal about the duty of the dietitian to the patient, especially the paying patient, but she also owes a duty to the intern and the nurse who are giving their services to the hospital over a period of years. If the proper morale is to be maintained, satisfying and nutritious food must be served them in surroundings that are attractive and cheerful.

That Americans are eating to the maximum of their capacity is shown by the large number of overweight individuals. We expect to eat heartily on holiday occasions, just as we expect to feel miserable afterwards; but to make every meal a feast meal is to court not only indigestion and discomfort but doctors, druggists and probably hospital bills. The dietitian, coming in contact as she does with so many persons and all of them consciously or unconsciously affected by the food they eat, must be a teacher, although her work is not always carried on in the classroom. Her classroom consists of a varied number of places. Her pupils may be the new nurses, the serving maids or most probably the patient in his room who declares that he cannot mix fats and proteins in the same meal, or the one who would like to know what to eat in order to gain weight. All of these are due for a few elementary, informal lessons in dietetics. Physicians and interns also come in for their share of teaching, but the dietitian has had to depend a great deal upon them for help and

In the decentralized diet kitchen the dietitian at St. Luke's carefully supervises the menus and the work done by the student nurses.

guidance and she has learned much from their experiences and medical knowledge.

The dietitian who carries on her duties only from the angle of the kitchen is failing in her duty to herself, to the hospital and to her profession. If the diet orders she receives are carried out in the most meticulous manner as far as food service goes, and she still fails to make contacts regarding the case with the doctor and the patient in the light of the information to be found on the patient's chart, she is only half fulfilling her duty. If, however, she has heard the doctor discuss the case at the bedside of the patient, if she has read the patient's chart and has talked to him, she will have a more sympathetic and understanding knowledge that she in turn can impart to those who are assisting with the diet.

Before there were dietitians, the physician had to do all of the dietary instructing of his patients, which in many cases was time consuming. But now all this instruction work has been given over to the hospital dietitian. The doctor merely writes the order for the diet and the dietitian hears the case discussed on ward rounds and becomes familiar with its salient characteristics. She then discusses the case with the student dietitian and the nurse, who in turn carry out the diet orders according to direction. The patient receives some instruction from day to day. Then, when he leaves the hospital, he is acquainted with his diet and can carry it on at home. Whenever possible it is advisable that the patient return to the clinic for occasional check-ups and that the dietitian go over the diet with him at this time.

A Profession With a Future

In a profession as new as dietetics there is a vast amount of knowledge waiting to be discovered. New facts regarding diet are being brought to light every day, theories are being advanced and fallacies exploded. The importance of good food habits is being emphasized as never before, and the public is receiving education along these lines from the radio, from magazines and from talks. Much of the information given out is for the benefit of commercial enterprises and their glowing advertisements often tend to bring the real merits of a food into disrepute. Many firms, however, have a dietitian on their staff and thus obviate unmerited claims.

There should be no opportunity for the dietitian's work to become routine. Such a condition means that she is not alert to the possibilities of her profession. She visualizes limitations that exist only in her mental consciousness. It is not the profession that is limited but her own inability to see its possibilities. In this class is the dietitian who constantly expresses such feelings of resentment as: "I can't get any cooperation from our superintendent"; "Our doctors aren't interested in dietetics," or, "I work hard all day, but it's no use." This type of person is either one who enjoys being a martyr, or one who does not have sufficient ambition to change the existing conditions of which she voices her disapproval.

Choosing the Hospital Dietitian

The duties of the dietitian in the hospital, therefore, may be summarized as follows:

1. She must serve to patients and personnel food that is nutritious, palatable and economical.
2. She must educate the patients, the student dietitians, the interns and the nurses in problems concerning diet.
3. She must fulfill any other duties of administration or organization that are required in carrying out these tasks.

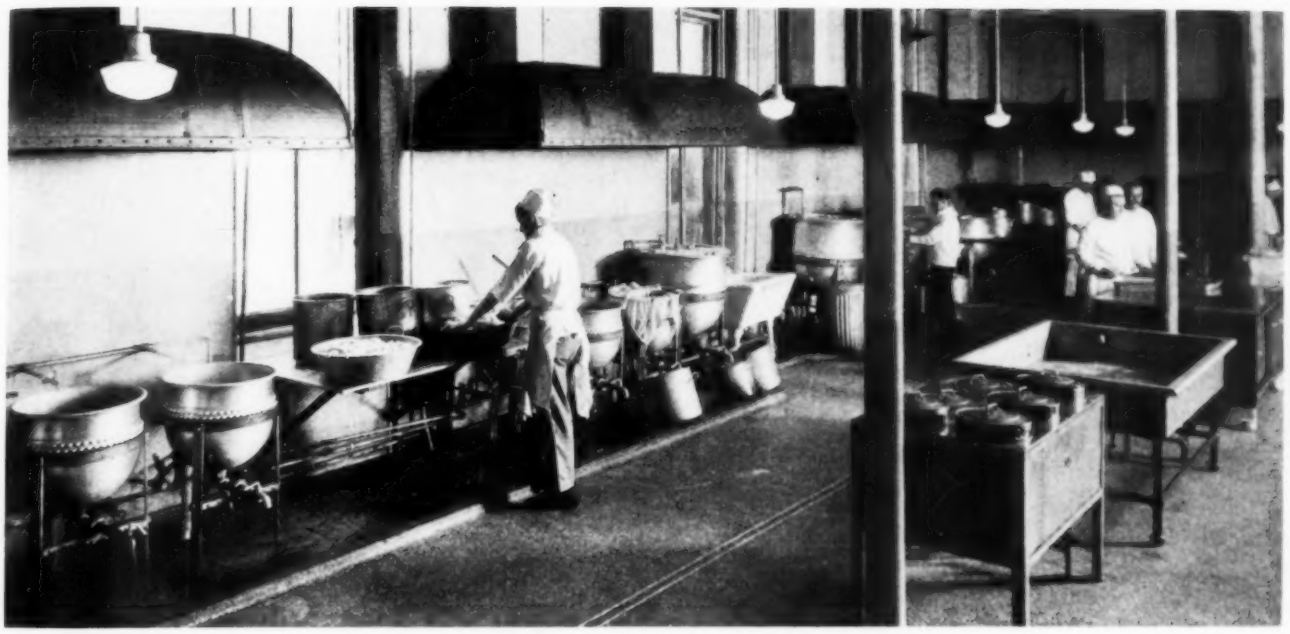
It is necessary for the dietitian to inspire confidence in her ability so that the director, the medical staff and the assistants respect the suggestions she may give. Without this confidence the work is difficult, but such confidence is not to be gained in a moment. Few persons in any organization can enter upon their duties with full authority from the first day on duty. Few would wish to. The emancipation of the dietitian has not yet arrived, but it is on its way.

The dietitian is no longer to be considered a fad or fancy by hospitals. She is a necessity and her department is as important as other departments.

There are important factors to be considered by the hospital administrator in establishing a dietary department. Great care should be exercised in selecting the director of dietetics. She should have a liberal background of education. She should be a graduate of a recognized school of dietetics and should possess special preparation and experience in hospital dietetics along administrative and executive lines. It is acknowledged that theoretical training can never make up for lack of practical experience and administrative ability.

It is also necessary that the director of dietetics be thoroughly trained in the technical aspect of the dietetic treatment of patients. She should be familiar with the elements of good food service. She should also be capable of properly choosing and directing personnel. Personality, diplomacy and the ability to cooperate belong essentially to the director of dietetics.

In dietetic administration the work involves to a major extent administrative functions in addition to the technical and teaching duties. Un-



Food for 3,000 meals daily is prepared in the main kitchen at St. Luke's, which is under the supervision of a trained hotel steward.

restricted authority must be given to the dietitian in that which is her responsibility. The cooperation of the administrator is of vital importance and of the utmost necessity and he should discuss with her matters pertaining to her department.

In large institutions an important question arises: "Shall the dietitian have complete charge of the main kitchen or shall this responsibility be assigned to the trained hotel steward?" Opinions, discussions and writings on the subject are varied. There is apparently a confusion of ideas as well as a tendency to overstate the advantages or disadvantages of either arrangement. St. Luke's Hospital, Chicago, to a definite degree favors the decentralized dietetic department.

Since it is estimated that from 25 to 35 per cent of the total hospital budget is set aside for food and food service, every possible economy that can be effected in either the dietetic department or in the main kitchen is worthy of careful consideration.

The Value of a Trained Buyer

Some institutions have a tendency to operate with department heads individually making purchases of food, linens and even hospital supplies. In view of this procedure, hospital administrators aware of the results have clearly seen the necessity for a purchasing department. The results obtained from a trained buyer are not imaginary but are definite and effective. A purchase and stores control system is definitely necessary when large quantities of supplies are purchased. A modified and less expensive system is recommended for smaller hospitals.

A mutual understanding between the purchasing agent and those whom he serves is essential. The buyer should be of even disposition, for he handles an important part of the hospital's business and his contact with the public can make or destroy the reputation of a good institution. Consideration and fairness to sales persons must be kept in mind at all times.

How Purchasing Should Be Done

Although the storage and issuance of food are as important as is its purchase, unfortunately many times they do not receive the same attention as that given to the purchase of food.

In large institutions all purchases should be made on a competitive basis. The purchasing agent who is considered desirable as a hospital buyer should have available at all times competitive market prices of all hospital commodities. The responsibility of purchasing centers in the buyer, and cooperation from departments is imperative. Purchase requisitions should contain thereon definite specifications. It is also imperative to have a system that will control the receipt and content of purchases, preferably by a receiving room clerk. This requires the necessity of actually counting and reporting the contents received without the actual knowledge of cost.

With purchase orders made up in quadruplet form and with prices established only on the vendor's copy, the receiving room and the storeroom are without any knowledge of cost. The

comptroller then checks the statement received from the vendor against all the departments concerned in the purchase.

Inventories must be maintained so that the superintendent and purchasing agent may know at all times the quantities on hand. If the hospital is of a size sufficient to consider future purchases, then consideration must be given to the cold storage of foods. It is advisable to have a room which will be used for storage only, thus avoiding the constant changing of temperature which results if the room is used daily in the preparation of food.

With a decentralized diet kitchen and a trained hotel steward, St. Luke's Hospital, with a capacity of 659 hospital beds and serving 3,000 meals daily to the patients, nurses and personnel, has made the cost per diem for food sufficiently attractive to render such an arrangement practicable under certain conditions.

It may be said that the directing of kitchen personnel involves all the accepted principles of general and scientific management. It requires study, modern equipment and a proper consideration in the planning of efficient and economical food and food service. It likewise involves the training of personnel and the building of morale in employees so that patients and personnel may receive food good in quality, properly prepared and attractively served.

"Sixty Six Star"—A Unique Newspaper

Lepers living at the National Leper Home, Carville, La., are publishing their own weekly newspaper, which contains sketch illustrations, a sports column, announcements, jokes, a motion picture column, personal and social notes, as well as radio news and occasionally a continued story or play, according to the Public Health Service.

"Sixty Six Star" is the name of the lepers' news sheet. It averages about four mimeographed pages in length. The staff of the paper is composed of members of the colony, who occupy much of their time collecting news.

News values in a leper colony seem about the same as in the outside world. The lepers have their own parties, dances, sports, shows and radios. These activities provide a good supply of readable and interesting material for the several hundred subscribers inside, as well as for those outside who receive the sheet.

Glowing accounts of parties and "chicken suppers," as well as dances and visitors, relatives and friends of patients, are contained in almost every issue. One story published in a late issue gives the details of a party given to the staff of the paper by the editor. The article begins: "What a night! What a party! What fun!" It concludes with a toast made during the party.

What the New Health Service at the U. of C. Includes

In addition to the benefits of physical examinations and immunizations and other measures for the control of communicable disease, the new health service plan for the staff and employees of the clinics group, University of Chicago, provides the following specific benefits for the first year of operation under the plan.

1. All services performed in the out-patient department of the health service, that is, ambulatory medical care.

2. House calls in the district bounded by Fifty-Third Street, Cottage Grove Avenue, Sixty-Third Street, and Lake Michigan. After the first call the health service staff will have the option of caring for the case at the residence or sending the patient to the hospital.

3. X-rays and consultations with other clinics as directed by the health service staff.

4. Refractions (not including glasses).

5. Elective correction of remediable defects after the beneficiary has been a participant in the plan for not less than one year.

6. All necessary hospital expenses up to two months of hospital care, for conditions commonly cared for in the University of Chicago Clinics. This covers accommodations at minimum rates. More expensive accommodations may be occupied, the difference in cost to be met by the individual.

The plan does not include: (1) hospitalization for tuberculosis, mental and chronic diseases not ordinarily admitted to the University of Chicago Clinics except that such cases may be received for purposes of diagnosis; (2) prenatal and obstetric care; (3) elective operations for remediable defects discovered at the time of employment, it being understood that persons having such defects which might interfere with the proper performance of their duties would, as a condition of their employment, be required to have these defects remedied within three months at their own expense or on their own responsibility; (4) glasses, appliances and medicines except insofar as any of these are included in ordinary hospital care; (5) dental service, except consultation for diagnosis on request of the health service.

Preventing Dangerous Reactions in Intravenous Therapy

By A. H. PERKINS, M.D.
Assistant Superintendent, Waterbury Hospital, Waterbury, Conn.

ALTHOUGH the value of infusions of saline and glucose solutions given intravenously has become recognized generally, their value is frequently impaired by reactions of varying degree. Reactions may be classed as mild—those that are manifested by a mild elevation of temperature, slight chills and a slight fall in blood pressure—or severe—those with severe chills, cyanosis, nausea, vomiting, a marked fall in blood pressure and even collapse and death. Even a mild reaction is alarming to the patient, and severe reactions are always dangerous, particularly since they are likely to occur in the very ill cases. It is these cases that would be most benefited by intravenous therapy.

Several years ago we were using at Waterbury Hospital about 4,000 c.c. of intravenous solutions a day, and reactions occurred comparatively rarely. As the amount used became larger (35,000-50,000 c.c. per day), reactions became more frequent. After studying the technique of the preparation and administration of these solutions, I found no outstanding or readily apparent explanation for these reactions. Upon reviewing the literature of the last five years pertaining to the subject, I decided that there was still a great deal of guesswork in administering intravenous therapy, but that there were a few scientific facts that many of us have overlooked or did not know.

Eliminating Causes for Reactions

Many causes have been suggested for the reactions. I believe that hospital executives, in encouraging the preparation of the solutions and in supplying the apparatus for the administration of the solutions, should use every known means of eliminating the possible causes of reactions. The rubber tubing, the speed of injection, the temperature of the solution, the hydrogen ion concentration of the solution, the absorption from glassware, the bulk of the solution, the individual susceptibility of the patient and the disease itself all have been considered as possible factors in the cause of reactions. Individual susceptibility cannot be foretold, but from the work of Rademaker and also of Titus, it seems that it plays a minor part and certainly is not a cause that can be controlled.

Types and severity of diseases have been suggested. There has been very little work done on this particular phase. There is a suggestion, in the table of fifty-six cases reported by Rademaker, that the severity of the disease may increase the patient's susceptibility to reaction.

Clinician Has the Final Say

As to the velocity of injection and the bulk and temperature of the solution as causes of reactions, these factors are beyond our immediate power to dictate. We may have our beliefs, but the clinician who is ordering the medication is the one who determines these factors. Among those who have studied the question, there is still a difference of opinion. There are those who believe in the continuous intravenous injection of 5 per cent or 10 per cent glucose given at the rate of from 75 to 200 c.c per hour. Horsley, Matas, Hendon and Hirshfeld hold this opinion. The other group of which Titus in Pittsburgh is the leader, believes that a more concentrated solution of glucose is of greater benefit, given a shorter period of time. He advocates a 75 gm. dose of glucose for the average adult given as a 25 per cent solution at the rate of 240 c.c. an hour. The workers at Sloane Hospital for Women, New York City, arrived at the same conclusions independently. Rademaker, who bases reactions almost entirely on the presence or absence of a pyrogenic substance in the distilled water, states that: "Nonpyrogenic solutions given at the rate of 1,000 c.c. in ten minutes through a large bore needle gave no reaction. Pyrogenic solutions given at a rate of 1,000 c.c. an hour produced their usual reactions." Of course, 1,000 c.c. per hour is a much greater velocity than that advocated by the Horsley group, but experience does seem to show that it is the pyrogenic factor rather than velocity that causes reactions. Hirshfeld and his workers in a recent article, "Influence of Velocity on the Response to Intravenous Injections" summarize by saying:

1. The rapid injection into the vein of any mole-

cule may result in quite widespread disturbances.

2. This syndrome is described. The term, "speed shock," is suggested.

3. "Speed shock" may terminate fatally.

4. The primary disturbance occurs in the liver cell.

5. The relationship between "speed shock" and the anaphylactoid reaction and other allied biologic phenomena such as the nitritoid crisis, posttransfusion reaction, etc., is discussed. The belief is expressed that these may be dependent on "speed shock." If not, their similarity rests on their common site of origin, the liver cell.

6. "Speed shock" is important to the pharmacologist, and errata due to failure to consider the factor of velocity are illustrated.

7. In addition to its rôle in the foregoing conditions, "speed shock" may be important to the clinician as an explanation of the sudden deaths reported following intravenous injection.

8. A slow intravenous drip permits of the introduction of huge quantities of fluid and agents of all sorts.

9. Even toxic products may be introduced with impunity, especially if the injection is interrupted.

10. The practical value of these observations in the prevention of "speed shock," anaphylaxis, anaphylactoid and allied biologic reactions is discussed.

RADEMAKER'S TABLE I—EFFECT OF DISEASE

Disease	*Reaction*	*No Reaction*	*Percentage*
Acute gall bladder.	4	11	36.3
Peptic ulcer	5	5	50.0
Sigmoiditis	1	7	14.0
Acute infection....	1	1	50.0
Peritonitis	1	6	16.0
Miscellaneous	1	13	7.0
Totals	13	43	30.2 (Ave.)

Hirshfeld acknowledges the possibility of "bulk reaction." He believes it exists, but that it is not dangerous and may be abolished by intermittent infusion, or infusion at a slow rate.

The various opinions on the correct temperature of solution are as follows:

Rademaker says that nonpyrogenic solutions at 20° C or 44° C are given without reactions. Cool fluids in patients with high temperature cause a drop in temperature without reaction. Pyrogenic solutions at body temperatures give reactions.

Hendon says the temperature at the vein should be 100° F. The temperature in the container should be 120-130° F.

Hirshfeld holds that the temperature of the injected fluid plays a minor and relatively unimportant rôle. In experiments which he conducted the fluids were usually injected at room temperature. In certain of the experiments the temperature of the fluids was carefully controlled. Shock was obtained at one time or another with any given substance at any temperature whether chilled or warmed to body heat. The reaction was slightly more severe perhaps when the solution was cooled or chilled. The thermal effect, however, was slight and insignificant when compared with the velocity. Also, chilled solutions could be injected with impunity provided only that the rate of injection was controlled.

Matas does not believe temperature affects reactions one way or the other. If the patient has a high temperature, he gives his solutions at room temperature; if the patient's temperature is low, he has his solution 100-104° F at the vein.

Horsley follows Matas as to the temperature of the solution.

Titus believes 100-110° F at the vein is important, and he has a special electric heater to keep it at this point.

I have gone over these clinical variations in technique briefly because I believe we should be ready to supply solutions in the various strengths, temperatures and amounts, and that we should deliver them into the veins at the speed our clinicians may demand. Later I shall describe the apparatus used at Waterbury Hospital to meet these varying demands.

What Rademaker's Studies Show

The hydrogen ion concentration of the solution as a factor in causing reactions has been carefully studied by Rademaker. His work shows that salines of alkaline *p*H are more prone to give reactions. The line of division is placed at 7.05. Solutions with a *p*H greater than 7.05 were shown to be pyrogenic or reaction giving, and solutions with a *p*H below 7.05 were nonpyrogenic and gave no reactions. That *p*H in itself was not a causal factor was shown by buffering a solution of high *p*H, or pryogenic, to a lower *p*H only to have reaction still occurring. Additions of ammonia to solutions of low *p*H, or nonpyrogenic, caused no reactions although the final *p*H was over 8.

The *p*H of absolutely pure water should be 7.0, and the fact that solutions, when freshly boiled, having *p*H higher than this, cause reaction, suggested strongly that alkaline impurities might be the casual factor. Rademaker then ruled out all other causal factors by showing that, regardless of temperature, velocity of injection, glucose and sodium chloride of themselves, rubber tubing, types and severity of disease, individual susceptibility and absorption from glassware, nonpyrogenic

water gave no reactions under all circumstances. He now turns his attention to distilled water. The *p*H in twenty-five bottles was found to vary from 5.9 to 7.3. The original *p*H was not changed when this was made into a saline solution, but boiling fifteen minutes in the autoclave caused a rise in *p*H. This *p*H fell at a definite rate on aging. This fall had no effect on reactions, for a solution of the original high *p*H still gave reactions at the low level reached by aging. Reboiling brings the *p*H back to the original. Sterilization excludes the action of bacteria or their products as the cause of this drop on aging. Its rapid occurrence and ready reversibility lead one to believe that this is purely a chemical absorption of gases, probably carbon dioxide from the air. The *p*H in boiled solutions causing reactions suggests, however, the presence of an alkaline, nonvolatile substance as the causal factor. As a result, an analysis of distilled water was undertaken.

Two samples were used, pyrogenic (*p*H 7.5) and nonpyrogenic (*p*H 6.7). The differential analysis is shown in Rademaker's Table II.

Preparing the Solutions

Turning to the study of bacteria, Rademaker was able to duplicate the work of Dr. Florence Seibert. Even fractional distillation revealed the same results, except that Doctor Seibert was able to eradicate the pyrogenic property of the first fraction by means of a water trap. Her work continued further, however, in that she isolated the bacteria as belonging to a group of river bacteria classified in Jordan's classification as Groups X and XI. She definitely and conclusively proved that reactions were caused by the toxic products of these bacteria and not by the bacteria themselves and showed how easily water could be contaminated by them.

Rademaker states that: "The quantity of pyrogenic water necessary to produce reaction may be very small, since from ten to a hundred cubic centimeters may easily give a severe reaction, as demonstrated by Doctor Seibert and corroborated by us in a series of cases. Pyrogenic substances can occur in forty-eight hours after contamination, unless the water is first sterilized to prevent the growth of organisms. Moreover, only the most efficient of spray traps will prevent the first fraction causing reactions, as we have shown in a recent series of infusions.

"Practical application of these combined results is simple and easy. Single distillation by a suitable apparatus, preferably a still containing a multiple baffle plate spray catcher with immediate sterilization and absolute seal will make solutions permanently reaction free, unless the seal is broken. The essential feature to be stressed again and again is the necessity of water trap distillation, to prevent the mechanical carrying over of toxins, and immediate sterilization and seal to prevent the growth of bacteria. Triple distillation is not essential if these precautions are carried out, but they must be carried out accurately and carefully since the tap water used for distillation contains many of the pyrogenic substances. Any flaw in this mechanism, either in inadequate apparatus, or in delay in sterilization, will nullify all other efforts or precautions taken to prevent reactions."

Opinions are about equally divided on the importance of rubber tubing as a factor in causing reactions. Those who believe it is a factor prepare their rubber in about the same manner.

In the light of the information gathered, we believe the following plan for the preparation of intravenous solutions should be successful in combating reactions due to intravenous therapy.

RADEMAKER'S TABLE II—DIFFERENTIAL ANALYSIS OF PYROGENIC AND NONPYROGENIC SAMPLES

	Pyrogenic *p*H 7.5		*Nonpyrogenic* *p*H 6.7	
Total solids	3.4	mgm/L	3.2	mgm/L
Organic solids ..	2.2	mgm/L	1.2	mgm/L
Ammonia	0.69	mgm/L	0.34	mgm/L
Inorganic solids..	1.2	mgm/L	2.0	mgm/L
Ammonia content (distilled)				
First fraction..	0.532	mgm/L	0.157	mgm/L
Residue	0.159	mgm/L	0.181	mgm/L
Bacterial count..	150,000	per L.	550,000	per L.

We use ampoules of 50 per cent dextrose. We think this is an extra safeguard. However, a c.p. anhydrous dextrose of any reliable manufacture can be used with confidence.

As a solvent we use fresh double distilled water. Rademaker insists that single distillation with his method is absolutely enough. Dr. Frederic A. Washburn, director, Massachusetts General Hospital, Boston, states that a single vertical still has given satisfactory service. He emphasizes the importance of washing the still frequently in order to keep it free from all nitrogenous deposits. We use a similar still, but we use it double. In other words we insist on being doubly sure. Analysis of the distilled water from the standard vertical type of water still shows:

Free Ammonia	.0000
Alb. Ammonia	.0000
Nitrogen as Nitrate.....	.0000
Nitrogen as Nitrite.....	.0000
Bacteria	0

The *p*H was 6.8 at 20° C.

We believe the vertical type of still is an improvement over the horizontal type, since in the horizontal type there is an air pocket and the distillate may absorb deleterious matter from this. The vertical still has a double set of baffle plates.

All glass funnels and flasks are thoroughly washed in distilled water. The dextrose, Ringer's powder, or c.p. sodium chloride, is dissolved in the correct proportion of distilled water and the solution is then filtered through three, double paper filters into fireproof Erlenmeyer flasks. Immediately after the solution is made, it is sterilized.

Sterilizing and Sealing—The Final Steps

Sterilization is accomplished by inserting nonabsorbent cotton plugs in parchment, covering them with a double thickness of gauze which is tied with narrow tape about the neck of the flask and autoclaving the flask once for twenty minutes at fifteen pounds' pressure. A space of about four inches is left between the level of the solution and the stopper, so that the vacuum will not force the solution against the stopper. Rademaker says that he closes the sterilized vessel with a sterile cork and pours a small amount of paraffin over the cork. This produces an absolute seal.

If the solution is perfectly sealed, it will keep indefinitely. We endeavor to manufacture so that our solutions are never more than seventy-two hours old.

Our apparatus consists of a 300 c.c. salvarsan cylinder with the necessary rubber tubing, needle, clamp, glass window and infusion thermometer. If a continuous slow infusion is demanded, a Murphy drip bulb is inserted in place of the glass window. If the physician wishes the solution kept warm, we use an electric heating pad about the cylinder. All glassware is fireproof. It is thoroughly washed, rinsed with distilled water and autoclaved. When boiled, sediment from tap water is often to be seen within the glass, and this may readily contain pyrogenic material. The infusion thermometer, when used, is rinsed with distilled water. It is kept in a 2 per cent antiseptic and disinfectant solution when not in use.

It cannot be emphasized too strongly that needles and tubing should be thoroughly cleaned and rinsed with distilled water before they are autoclaved. The rubber tubing should be stretched and twisted after autoclaving, and rinsed with sterile distilled water to remove any possible deposits. Pure gum rubber tubing should be used. New tubing should soak six hours in 4 per cent sodium hydroxide solution. It should then be washed in running water and in distilled water and autoclaved. One person should be in control of the preparation of solutions and apparatus.

A label is attached to each flask similar to the following: Glucose—c.p., 25 gm. in 100 c.c. freshly distilled water; sterilized.....(date); for intravenous use until.....(date) only. Signed.....

We prepared and administered within thirty days 196,828 c.c. of solutions intravenously without any reaction of any kind. The day before we started our still we had three severe reactions and seldom had a month passed without one or two.

It is my opinion that we shall continue to have an occasional reaction, because intravenous medication will be given to patients who are unfit subjects for this medication, either because of the nature of the disease, its severity or because of the individual susceptibility of the patient.

If hospital administrators safeguard every step in the preparation of the intravenous solution and in its administration, then the responsibility for reactions does not rest on them.[1]

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Establishing a Pleasant Contact With the Patient

A practice that has been in favor with hotels for some time has recently been put into effect at Waterbury Hospital, Waterbury, Conn. The mail that is delivered to the patients the morning following their admission carries a small envelope with the following printed on it:

IMPORTANT

On the enclosed slip is the rate of your room and OUR spelling of your name. If incorrect, please advise the office. This information will facilitate the delivery of mail, messages and instructions to visitors.

The slip also contains a line to the effect that "bills are payable weekly in advance."

"As far as I know this is a new idea for hospitals," writes Dr. B. Henry Mason, superintendent.

[1]Read at the meeting of the Connecticut Hospital Association, Danbury.

How One Sanatorium Was Built to Serve Two Counties

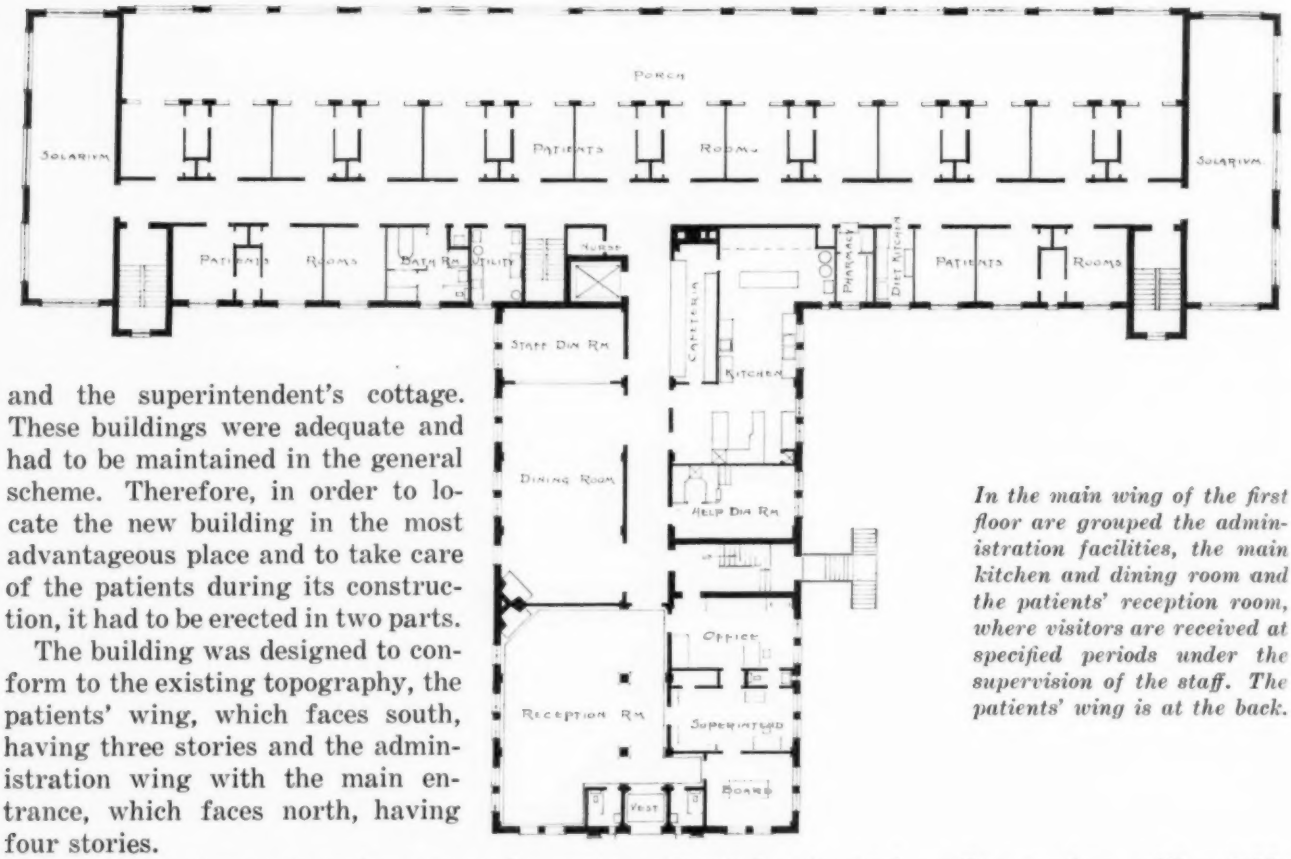
By STANLEY W. CASSIDY
Of the Office of Leland Henry Niles, Architect, Amsterdam, N. Y.

BY 1929 Montgomery County, New York, had outgrown its original tuberculosis sanatorium, which was an old farmhouse remodeled and enlarged. Larger quarters were needed. At the same time Fulton County, adjoining Montgomery County, needed a new building since a part of the plant there had been destroyed by fire. After many conferences and revised agreements, the Montgomery County supervisors agreed to erect a building large enough to take care of Fulton County's patients at a fixed price per year for a specified number and at a per capita rate thereafter for a term of years. Since such an agreement could not be made between the boards of supervisors at that time, the law relative to contracts for maintaining in a county hospital tuberculous patients from another county was amended.

As neither county required a large plant it was obviously a decided economy to eliminate the duplication of all the administration, the operating and the x-ray units, the cooking and service equipment, the laundry, heating plants and the overhead expense of maintaining two such institutions.

Montgomery County had a large plot of ground overlooking the Mohawk River on Swart Hill about five miles from Amsterdam. In addition to the original patients' building, there were a boiler house, a nurses' home, a children's preventorium

This solarium provides a pleasant spot for ambulant patients to lounge and read. There are two such solariums on both the first and the second floors.



In the main wing of the first floor are grouped the administration facilities, the main kitchen and dining room and the patients' reception room, where visitors are received at specified periods under the supervision of the staff. The patients' wing is at the back.

and the superintendent's cottage. These buildings were adequate and had to be maintained in the general scheme. Therefore, in order to locate the new building in the most advantageous place and to take care of the patients during its construction, it had to be erected in two parts.

The building was designed to conform to the existing topography, the patients' wing, which faces south, having three stories and the administration wing with the main entrance, which faces north, having four stories.

The main entrance is under cover of a porte-cochère and the ambulance entrance and delivery entrance are at the ground floor level between the two buildings. In extremely cold weather the openings in the building may be closed by means of overhead doors. This provides an ambulance entrance out of the sight of patients and near the elevator and morgue and makes possible the delivery of supplies to the door of the culinary department.

The style of architecture, both inside and out, is modified Georgian.

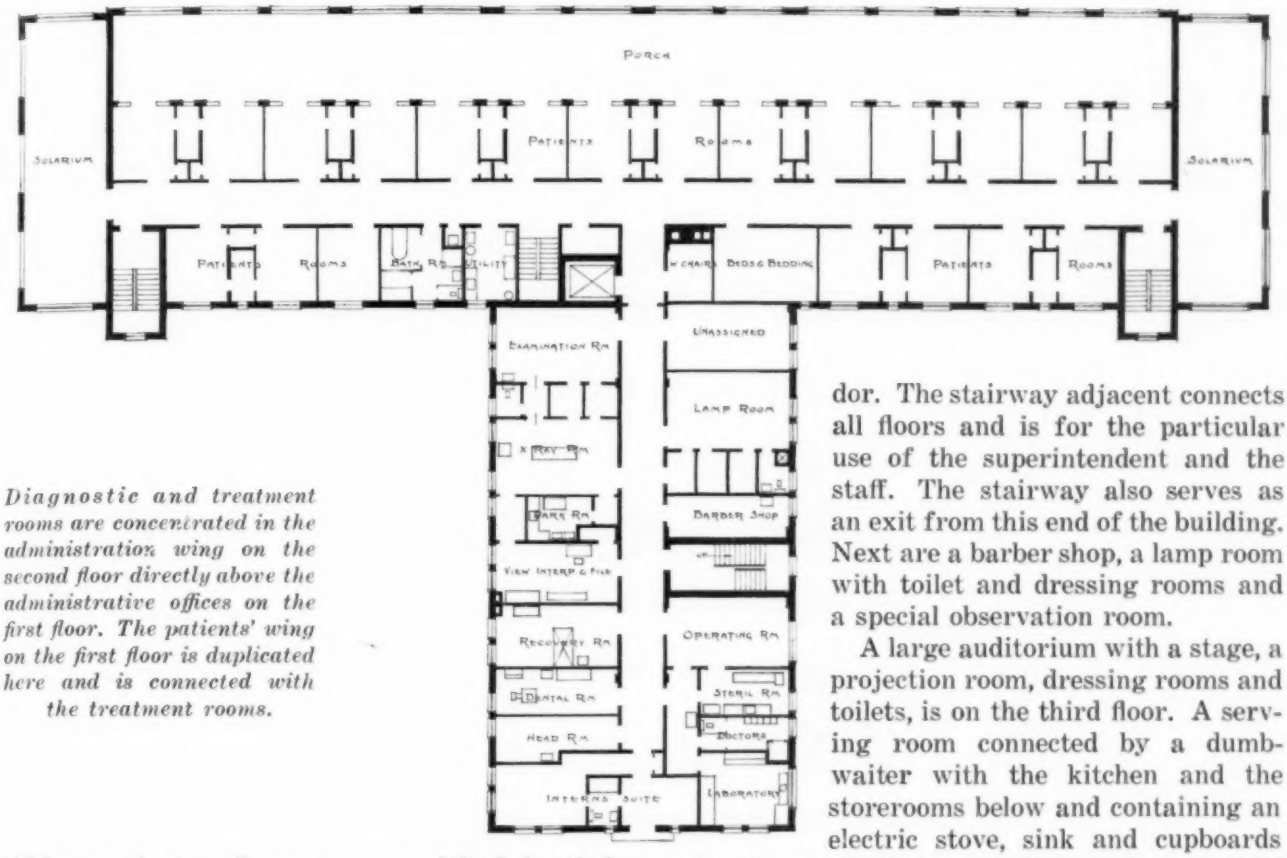
Exterior Is Colorful

The exterior of the building is constructed of rough texture face brick in a wide range of colors. The walls are laid with a flush cut joint and are trimmed with cast stone. The windows are all outward opening steel casements. The framework is of structural steel with floors of reinforced concrete; all stairs are of steel with concrete fill; all partitions that are not built of brick are of gypsum block or steel channels with metal lath on both sides; all trim, including the base, the door jambs and the window stool corners, is of steel.

The building is practically fireproof, which was the intention of the builders from the start, since its distance from any fire department enhances the hazards to patients and increases the insurance cost. As the building is now constructed, with an elevated water tank on the premises, with outside hydrants about the various buildings and with standpipes and three hose cabinets on each floor, the insurance rate has been reduced to a minimum and the patients' lives are protected.

The floors of the porches are of cement finish. The toilets and baths, the utility rooms, the laboratory, the sterilizing room and the operating corridor are of terrazzo with a terrazzo base. The kitchen has a red quarry tile floor, base and wainscot. The operating room has a flint tile floor, base and wainscot. The diet kitchen and the staff and visitors' toilets have white ceramic tile floors and base. The other floors, including the stair treads, are covered with battleship linoleum glued directly to the concrete floors. In the corridors, the linoleum is laid with a border about six inches wide so that a single width of linoleum is used. Seams are avoided and the entire appearance is decorative. In the reception room on the first floor there is an inlaid marble pattern linoleum with a black border. This with a combination black marble and wood base is extremely effective.

The entrance to the reception room on the first floor is through a vestibule. The board room, the superintendent's office and the business office are on the right. In the reception room patients receive visitors at specified periods under the supervision of the office. In this way visitors are prevented from roaming about in the building. Bed-



Diagnostic and treatment rooms are concentrated in the administration wing on the second floor directly above the administrative offices on the first floor. The patients' wing on the first floor is duplicated here and is connected with the treatment rooms.

ridden patients, of course, are visited in their rooms.

On the main floor are also the main kitchen, connected by a dumb-waiter with the preparation and refrigeration room on the ground floor and with a serving room on the third floor, the dining rooms for the patients, for the staff and for the help. On the ground floor in the administration wing are the refrigeration room, the machine and meter room, the transformer room, the storeroom with a tunnel to a root cellar, the coal room and the scale or checker's room where all incoming provisions can be checked and weighed on the scales in the driveway. Here also are four rooms and a bath for the men workers. A separate entrance leads to these rooms from the outside.

On the second floor of the administration wing are concentrated all the diagnostic and treatment rooms, including an examination room and an x-ray room, with dressing rooms and a toilet between. Then come a dark room and a viewing and interpretation room. Next are a recovery room, directly opposite the operating room, furnished and equipped exactly like a patient's private room, a dental room and an eye, ear, nose and throat room. The front of the wing is occupied by a suite of rooms for an assistant or outside physician who may be called in an emergency. Next are a laboratory, a doctors' room, a sterilizing room and an operating room all connected by a private corridor. The stairway adjacent connects all floors and is for the particular use of the superintendent and the staff. The stairway also serves as an exit from this end of the building. Next are a barber shop, a lamp room with toilet and dressing rooms and a special observation room.

A large auditorium with a stage, a projection room, dressing rooms and toilets, is on the third floor. A serving room connected by a dumb-waiter with the kitchen and the storerooms below and containing an electric stove, sink and cupboards makes the auditorium available as a banquet hall on special occasions. There is also on the third floor a large room for school and occupational therapy use. There are toilets for men and women in connection with the roof and the auditorium and a storeroom for the cots and benches that are used for natural heliotherapy on the roof. The parapet wall on the north side of the roof has been built up to a height of six feet to protect patients from the cold north and west winds and to assure them more privacy.

Surroundings Are Homelike

The patients' wing of the building, three stories in height with all floors almost identical in plan, reveals the trend in modern sanatoriums toward giving the patients more comfort and homelike surroundings at a minimum of cost. Each room, 10 by 12 feet, has a clothes closet and an adjoining toilet room. Each floor contains a large porch 14 feet wide across the south side, opening from fourteen private rooms with toilets and closets between. The wall between the private rooms and the porch is composed of a pair of French doors and a double hung window on each side. The wall, therefore, is almost entirely of glass and admits plenty of light and air. In place of piers about the columns, these rooms have their principal corners truncated, which obviates right angles that are hard to clean. All other corners and angles, of

course, are rounded out and have a small radius.

The toilets are equipped with a closet, a lavatory and a dental bowl each. The only built-in accessories are a grab bar in front of toilets for infirm or aged persons, and a toilet paper holder. Each patient keeps his towels, soap and other accessories in his own room. Each closet is fitted with hanging strips and hooks on the sides, a hanging rod for clothes on hangers and a good sized shelf. At each end of the corridor running east and west are solariums, which are used as reading and recreation rooms by ambulant patients. They are equipped with nurses' call, radio and other electrical outlets so that they can be readily converted into wards in case the normal capacity of the building is exceeded. On the north side of the corridor are more rooms with connecting toilets and several without toilets for the more advanced or bedridden patients. On this side of the corridor is also the main bathroom, containing a built-in tub, a free standing or invalid tub, a shower, a lavatory and a closet. The tubs are enclosed in dwarf flush metal partitions. Adjoining and opening to the corridor is a slop sink closet, which is used by the help in cleaning. Next comes the utility or workroom which contains a bedpan sterilizer and washer, a utility sink and drain board, a utensil sterilizer, a glass lined clothes chute, a worktable and a blanket warmer.

How Special Rooms Are Arranged

In addition to the rooms on the ground floor adjacent to the elevator which connects all floors and roof, there is the main linen supply room, and opposite the elevator is the morgue which is accessible from the driveway. On the first or main floor are a special diet kitchen, a pharmacy and a drug room, and near the elevator is a room in which nurses may change their clothes or leave their wraps on their arrival from the nurses' home. On the second floor is a large room for the storage of surplus beds and bedding, as well as a room for stretchers and wheel chairs.

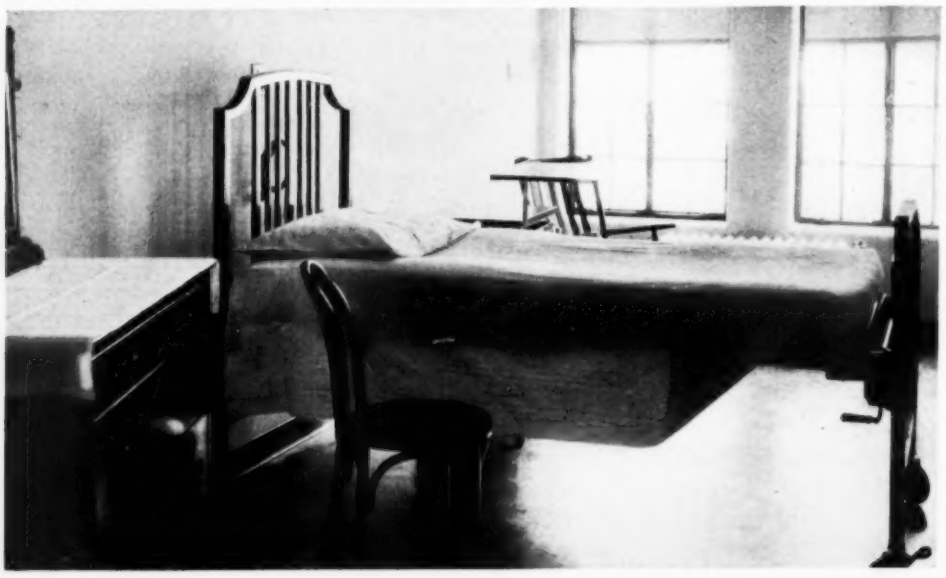
Features That Increase Efficiency

The patients' rooms have linoleum floors. When these are waxed and polished, they assure a noiseless, comfortable and easily cleaned surface. Windows throughout the building are screened on the inside. The screens are left on the year round. Those on the ground floor are secured to the sash with one screw and a spring clip to prevent patients from removing them. The screens on the upper floors are simply snapped on with a spring clip. Sash operators and fasteners operate through the screens without its being necessary to remove them. All the walls throughout the building have been finished with two coats of flat wall paint sprayed on, and all service rooms, such as utility baths, toilets and the kitchen, above the wainscot, have been enameled.

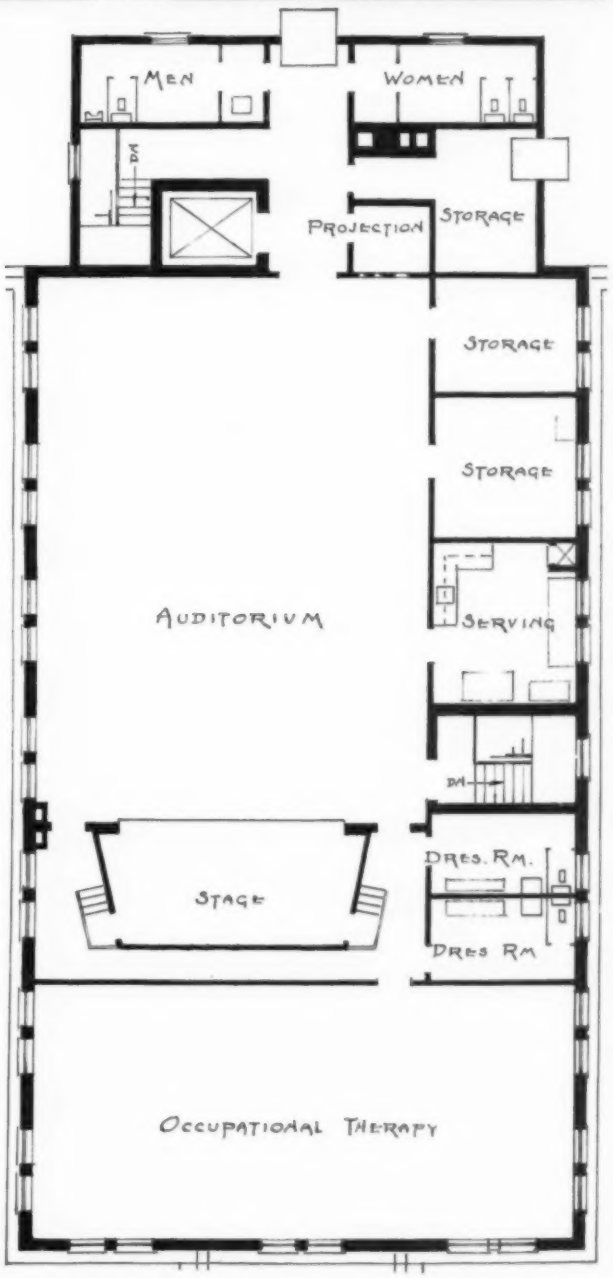
The elevator connecting all floors is of the automatic push button type, and it is large enough to accommodate a bed or stretcher and the accompanying nurse.

On the ground floor a built-in incinerator serves all floors. It takes care of all waste and rubbish except garbage from the kitchen which is sterilized in a space adjacent to the coal room and carted away. In this space there is provided also a place for sterilizing all milk cans before they are taken from the institution.

There are three stairways in this wing, a fire tower at each end and a service stairs at the center adjacent to the elevator. A nurses' station is on each floor at the intersection of the two corridors



The recovery room, directly opposite the operating room on the second floor, is furnished and equipped exactly like a private patient's room.



Rough texture face brick in a wide range of colors has been pleasingly utilized for the exterior of the building. The plan of the third floor, at the lower right, shows the arrangement of the large auditorium and the occupational therapy room.

so that the floor nurse has control of the entire floor. The main nurses' station is on the first or middle floor. The main annunciator has been placed here so that the nurse on duty at night receives the calls from the entire building at this point.

Each room is equipped with a nurses' call station as well as each bed position on the porch. The solariums each have seven electrical outlets so that no matter where a patient may be a call button is available. Besides the light over the patient's door and the one on the annunciator a light likewise flashes in the utility room and in the superintendent's office, so that when a patient signals, someone will surely respond. Another feature has been added to the call system. On all doors to the stair towers is a door switch that operates when the door is opened, lighting a bulb over the door, ringing a bell at the nurses' station, and flashing a light on an annunciator which illuminates letters corresponding to the letters on the doors. The center stairway is the only one not so protected and this is directly under the nurse's eye.

Besides the public telephone system with its several outlets, there is a private phone system with stations in the office, the kitchen, the storeroom, the help's quarters, one at each nurses' station, one at each stair tower, one in the operating suite, one in the interns' suite, one in the

serving room on the third floor and one in the third floor corridor in addition to outside stations in the superintendent's cottage, the nurses' home, the boiler room, the laundry and the preventorium.

A complete two-channel radio system is provided with the main receiving and control board in the office. There are duplex head set outlets at each bed location, even on the porches and in the solariums, giving the patients a choice of two stations, and several loudspeaker outlets in the auditorium, the occupational therapy room, the dining rooms and the reception room.

Plumbing System Is Modern and Complete

The plumbing system is complete and up-to-date. Water is supplied by springs and is pumped to an elevated tank from which it flows by gravity throughout the system. Besides this, two large storage tanks and a pump are maintained ready for use in an emergency or when the elevated tank is being cleaned or repaired. Two large hot water tank heaters with automatic temperature control supply hot water to all fixtures. All valves are in a tunnel under the first floor. They are accessible and are numbered and lettered to correspond with charts hung in convenient places showing fixtures controlled by the valves. All fixtures are of acid resisting enamel and all faucets and fittings are of chromium. A complete sewage disposal system to care for all buildings is also included.

Two horizontal tubular boilers in the boiler plant supply steam, both high and low pressure, for the building. The high pressure lines carry steam at from forty to fifty pounds pressure for cooking and sterilizing, and the low pressure lines carry steam at from three to five pounds for heating. The heating is done by a vacuum system. All lines are brought from the boiler plant in a tunnel underground and are carried around the building in a tunnel 3 feet wide and over 4 feet high under the ground floor. The tunnel is accessible at various places about the building to facilitate the inspection and repair of pipes and valves.

The equipment was completely planned before the building was started. It is as complete as an institution of this kind warrants without an undue expenditure of public money. Everything has been done to give patients home comforts and home atmosphere in addition to the usual good food, care and sunshine necessary for the cure.

The building contains 553,466 cubic feet, and cost approximately $250,000 exclusive of furnishings and equipment, or about forty-five cents a cubic foot. It contains sixty private patients' rooms. With the solariums but exclusive of porch space, the institution is equipped to care for 102 patients.

A Cancer Center for World War Veterans in the Central States

With the estimate that 250,000 World War veterans at some time will apply to veterans' hospitals for treatment for cancer, a start has been made toward the handling of these men at Edward Hines, Jr., Veterans' Hospital, Hines, Ill., according to Dr. Hugh Scott, manager of the hospital.

In the Central States from Canada to the Gulf of Mexico and from the Allegheny Mountains to the Sierras—every veteran who is suspected of having cancer will be sent to the Cancer Center which Doctor Scott has established. At this hospital a wing has been remodeled and furnished with 150 beds, and a floor has been provided with a complete equipment for the treatment of cancer, that is, a surgical unit, an emanation plant and a treatment room for the surface application of radium, especially the application of large amounts. The hospital has in its possession 2,275 milligrams of radium. One gram has been placed in solution for emanation.

The organization has been divided into the ward service, the technical service and the tumor clinic proper or treatment service. The ward service consists simply of ward surgeons who do the ordinary work and supervise the daily care of the patients. The technical service has two doctors who serve alternately. These men are not only doctors but are trained physicists and understand emanation therapy. With the help of the technicians, emanation can be obtained daily, the amount of emanation contained in a seed measured, the radium which is to be used in deep seated cancer supervised and at the same time minor radium applications made.

The Clinic's Personnel

The tumor clinic itself consists of a general surgeon; a urologist; an orthopedic surgeon; a dermatologist; ear, eye, nose and throat surgeon; a neurologic surgeon and a cardiologist. Additions to the staff can be made as necessity demands. The surgical department has especially trained tumor pathologists who serve this clinic and there is also a pathologic room at the clinic.

The object of the tumor clinic is to see and study every case that is admitted. In this clinic Doctor Scott hopes to train each surgeon here and to familiarize him with radiation therapy. With one trained unit it is hoped to train other units in the Veterans' Bureau service, because as the years go by it will be necessary to establish other cancer centers in various parts of the country. At the present time the cancer center at Hines Hospital is the only one in the Federal Government.

Answering the Public Criticism of the Hospital

A Paper From the American Hospital Association Meeting

By JOSEPH C. DOANE, M.D.
Medical Director, Jewish Hospital, Philadelphia

DURING the past half decade there have repeatedly appeared in the public press articles purporting to convey the truth relative to the mismanagement, unfairness and general heartlessness of hospitals.

Even a casual inspection of the background of the authors of such contributions fails to reveal in most instances any evidence of their having sufficient experience and information to command the respect of the informed for their statements. But the public does not know this and is inclined to accept at face value the criticisms thus leveled at the hospital.

The hospital, however, need feel neither particularly complimented nor offended at this unusual interest in its affairs. This appears to be an age of controversy. Many writers, having learned that scientific and informative articles fail to bring fair remuneration or to interest the public, have adopted the plan of endeavoring to "debunk" every individual and every institution in society that has attained or lays claim to any prominence. The members of the medical and nursing professions, the clergy and even the church as an institution have not escaped the acrid pens of these persons.

False Accusations Are Rampant

While the public gaze has been directed particularly toward the failings of physicians and hospitals and while neither of these closely approaches perfection either in their scientific attainments or in their ethics, it is contended that the present critical attitude may be of benefit to the individuals or institutions being censured. T. S. Harding puts forth his "Fads, Frauds and Physicians," hoping thus to attract to his pocketbook numerous dollars. Dr. H. W. Haggard, writing under the euphonious and somewhat misleading title of "Devils, Drugs and Doctors" cleverly provides something of an effective antidote to this nauseous poison.

A hundred and one other pseudowriters, with the sole purpose of increasing their incomes, have been willing to distort the truth concerning hospitals and the practice of medicine generally. Fortunately a number of articles have appeared, written in a truthful and less sensational manner, defending and explaining the cause of the hospital. The public, however, apparently finds such reading less to its taste than that appearing under flaring headings of dime novel magnitude.

What the Critics Say

Every charge from inefficiency to criminal negligence has been leveled at the hospital within the past few years. Isolated instances of ineffectiveness have been elevated to the position of everyday institutional practices. It has been claimed that the hospital is a heartless institution, seeking only to increase its income at the expense of the poor and the suffering. It has been said that it is an institution conducted for the benefit of doctors, in which the most inhumane offenses against the rights of patients have been perpetrated. It has also been said that there are two classes of hospital patients, those who enter poor and those who leave poor. Dr. Joseph Collins, a usually careful and thoughtful writer, in his "Patient's Dilemma" states, "It must be easy to persuade oneself that an appendix ought to come out if your wife constantly reminds you that she has not had a new dress for a year or if your son has an inferiority complex from wearing patched clothes."

Surely such expressions of opinion cannot represent the standard of moral and professional ethics usually found among high grade physicians. It is regrettable that writers of sensational literature, attacking our best institutions, need only to turn for their half truth evidence to the pages upon which otherwise well informed and ethical persons have seen fit to set down frank opinions concerning the defects of doctors and hospitals.

Again there are those who claim that the heartlessness of hospitals is expressed in the prompt sending of bills and the requirement that expenses for treatment be met in advance. Every well informed hospital superintendent is fully aware of

the difficulties encountered in collecting the bills due the hospital. The charitable atmosphere in which the hospital is rightfully enshrouded is often interpreted by dishonest persons as an invitation to endeavor to defraud the institution, and this they do with apparent ease of conscience and with the usual immunity from prosecution. A superintendent does not easily convince himself that a suit for payment of hospital bills is a wise move. And yet is there any valid reason why it is more undignified or unethical for a hospital to collect its bills promptly than it is for a commercial house to do so? Unless the latter adopted such basic business principles, it would soon find itself in the hands of a receiver. A distinguished surgeon, permitting himself considerable poetic license of speech, recently remarked that hospitals pursue execrable business methods, that nursing is too expensive, that surgeons show far more courtesy to hospital attendants than to patients and that well run hospitals should be conducted efficiently for as little as four dollars per day per patient.

Again let us remember the inherent danger of proceeding too rapidly from individual observations to unqualified generalizations. After all, much of the confusion of mind with which the public now regards physicians and hospitals has come from pseudoprophets who by ignorant or vicious statements translate the defects of the individual into those of a class as a whole. Such statements, of course, simply place keen-edged weapons in the hands of the malicious and the uninformed.

That the expense of hospitalizing the sick is exorbitant is another favorite objection to the hospital of to-day. Recently some rather strong articles in rebuttal of this criticism have appeared in the lay literature. It has been shown, for example, by Mr. McNamara and Mr. Parker, in an article in the January, 1930, issue of THE MODERN HOSPITAL, that in 100 hospitals, 10,000 full-pay patients paid $72 for an average study or treatment period of eleven days. It is a question whether the hospital is always to blame for an individual spending more money than is economically wise in the treatment of a member of his family, whether a misguided and foolish generosity is not frequently a part of the psychology of sickness.

"The Pitiful Plight of the Middle Class"

It may be said that the chief bill of complaint registered against the institution in regard to financial matters does not concern itself with whether ward or de luxe private room patients are properly treated, but centers hysterically about the pitiful plight of the middle class. I have never been able to convince myself that the economic sufferings of the middle class at the hands of the hospital are as severe as is usually depicted. Experiments that have been carried on in the past half decade in regard to meeting the problems of the middle class are wholly commendable. It is a healthy and helpful plan to endeavor to scale downward the expense of being sick by limiting the fees of doctors and nurses and at the same time by lowering room rates. Every institution has at some time or another, and particularly lately, endeavored to adjust itself to community economic standards. The man who is too proud to confess poverty and who desires at all costs to maintain his economic self-respect is to be commended. And yet one frequently wonders whether the members of the middle class are doing as much as they should to help themselves. Certainly an attitude of passivity is far from encouraging the active efforts on the part of the community and the hospital to relieve the reputed distress of this group.

Generalizations Are Dangerous

Expedients that have been suggested for those desiring private accommodations but unable to pay for them are the endowment of beds for the middle class, the adoption of a partial payment plan, the introduction of group nursing and the limitation of physicians' fees. All of these schemes are helpful but any one of them or all of them will not satisfy the desires of those who expect to receive a great deal for a very little. The physicians of the community at times appear to feel that hospital nursing care is ineffective and too expensive. They are inclined to lay the burden of the public economic distress upon exorbitant nursing fees and unnecessary hospital charges. Again it may be remarked that to generalize in this respect is a dangerous procedure.

It has been claimed that hospital expenses are too high because the community is required to support too many unoccupied beds—that the country is overhospitalized. In some instances this is doubtless true. Hospitals sometimes come into being not because of the existence of a real community need but because of a desire to satisfy the supposed needs of the clientele of an individual physician or group of physicians. Such institutions flourish for a time, languish a while and at length die. Every community should carefully inspect the claims that are being made upon it for contributions for the support of hospitals. Frequently behind the reputed need of suffering patients will be found motives that are far from laudable and that reveal a desire for personal and professional aggrandizement on the part of some group, lay or medical. The time is fast approaching when poorly endowed and weakly staffed hospital parasites must close their doors or unite their

resources with stronger or more deserving institutions. Even if but 65 per cent of the 800,000 beds in the United States are occupied every day in the year, it must be remembered that the effect of seasonal variations and of institutional bed turnover is strongly reflected in these figures. Nevertheless it must be freely admitted that in the hospital field are to be found institutions whose reasons for existence are exceedingly questionable.

These statements must not be interpreted as an attempt by one within the ranks to proclaim that the millennium in hospital administration has been reached and that no error of the heart or even of the head is ever committed. The hospital has been accused of wastefulness. The public generally is often informed that the care of patients could be just as efficiently carried on for much less money, for the lay public rarely considers the financial millstone, represented by the care for a great free load, that hangs about the neck of most institutions. In many hospitals, 50 per cent of the time and expense incident to carrying on the day's work is spent in treating patients from whom no financial return can be expected. Indeed, in a series of hospitals that I recently studied almost 60 per cent of the total bulk of work done was for the nonpaying ward cases. It is true that there are a number of institutions in this country conducted on the proprietary basis, which declare dividends on an average per capita per day expense to the patient of $6. In these hospitals there are no free beds. I know of a splendid new hospital that earns 97 per cent of its expenses. In studying its service load, however, it is found that but 5 per cent of its patients are classed as ward patients and that some of these pay something. There are institutions innocent of efficient administrative procedures; those in which splendid personal contributions are being made by members of religious organizations, and lastly those in which a mediocre service is being rendered for which an average or above the average charge is being made. Such hospitals represent the class at which the uninformed point a finger of pride and to which they direct the attention of the average general hospital which is rendering an effective service and struggling under an overwhelming full load. To be sure, money is wasted in hospitals. It is also wasted in homes, factories and even, it is whispered, in the conduct of public business.

Receiving the New Patient

The lay public has a right to object to the apparently leisurely attitude adopted by hospital attendants when its members apply for treatment in the dispensary or ward. The hospital critics who make a livelihood from censuring institutions and individuals may now poise their pencils. It is feared that more prompt attention is sometimes given to the arrival of a new occupant for the de luxe suite than to the applicant for treatment in the dispensary or accident ward Over three decades ago, in one of the best institutions in this country the hero of the war against disease and insanitation in Cuba was kept waiting, although seriously ill, an undue length of time while young interns and nurses gossiped about the most recent success on the stage. He waited until his identity was known, and then, what a transformation! Bells jangled. There was a rush for stretchers. The superintendent of the hospital came. The chief of staff was summoned and the ultimate of consideration and attention was at once forthcoming. Would that all of the activities of our hospitals might be conducted so that the most humble inhabitants of the submerged portions of our cities might be received with at least a modicum of the attention that was given to this distinguished officer.

More Rules Are Needed

The public rarely objects when a patient about to be operated on is exposed to the sights, noises and smells of a busy operating suite. It does not object because it is not informed as to what it may expect. One of the severest critics of hospitals generally recently remarked that the first necessity in remedying all institutional ills was to coax hospital managers and doctors away from their ritualistic ideas and preconceptions about how hospitals should be run. The difficulty in many instances appears to be that there are not sufficient ritualistic rules governing the conduct of such everyday matters as the admission of patients, the storing of valuables, contact with friends and family physicians, the adherence to strict ethical practice and the exemplification of a humanitarian spirit that is a true reflection of the rule that is said to be golden.

Perennially with us are those who are represented by the author of an article that appeared in the *North American Review* over a year ago, who cites as an evidence of the hospital's thoughtlessness of the economic rights of its patients a certain Western hospital in which dividends are annually declared on an extremely moderate average rate per day. In making these statements such persons of course exhibit a total lack of knowledge of the facts or a clever attempt to avoid them.

There is no question but that many persons look upon the hospital as an institution to be cleverly put off when a request is made for the payment of a bill. It is considered somewhat in the same light as a blind man on the corner from whose hat one may safely abstract dollars while depositing

pennies. I would not urge in any degree the adoption of a mercenary plan but would recommend a more certain and skillful credit policy with a firm but undemonstrative insistence on the payment of bills when they are due.

The public hospital that is supported from tax funds must be required, if it will not do so voluntarily, to bear a greater share of the free load. It is impossible for anyone to draw a clear-cut line that separates the obligations of the privately maintained institution from those of the tax supported hospital. In a certain Eastern city, it was found that three boroughs were contributing $12,000 per year to the hospital that was caring for their free load, which was supposed to recompense the institution for a $165,000 free service. In such instances the institution has an obligation to its community to insist that tax agencies recompense the hospital on a fair per capita per day basis or construct their own institution. How much free work should be rendered a community in return for such contributions is a difficult question. Each hospital must decide this problem for itself. The bogey of the politician is the necessity of an increased tax rate. Because of this fact, he will avoid as long as possible playing fair with the private hospital. A frank insistence that a fair adjustment be made on the basis referred to or that a public hospital be provided will usually bring about satisfactory results.

Is the Hospital Inhuman?

Perhaps the most serious charge leveled at the hospital is that it exhibits a questionable humanitarianism. From its very beginning the hospital has drawn its sustenance from the charitable springs, which men and women have unfailingly provided for the medical care of the sick poor, because of their conviction that in the hospital were always to be found such fine qualities as kindliness, compassion, self-forgetfulness and generosity. Indeed, from the very start the hospital has been but the expression of community charity and pity for the suffering. The very existence of free ward beds in most institutions is but a public proclamation that this spirit still exists. There are few hospitals that inspect pocketbooks before learning of medical needs. As has been intimated, the fact that an individual was obliged to borrow money or to rely upon the charity of his friends to pay for his stay in the hospital may not be an example of inhumanity on the part of the hospital but of lack of economic foresight on the part of the individual.

Because semiproprietary institutions take advantage of every opportunity to increase their incomes, the public should not be justified in laying the charge of mercenariness at the doors of all hospitals. Physicians go about their ward rounds quietly and without ostentation, expecting no fee for this work and the doors of every true hospital are opened by the existence of a real need, a return for its services being expected only if the individual is able to pay. Irrespective of the raucous cries of the Swan Hardings and others of his ilk, the heart of the hospital is still sound, even though here and there its head may err.

Why America Appears to Have a High Maternal Death Rate

Contradicting assertions that the United States experiences the highest maternal mortality rate in the civilized world, Dr. Andy Hall, state health director for Illinois, declares that the apparently excessive rate in this country results from a more accurate diagnosis of illness and a greater fidelity in classifying records.

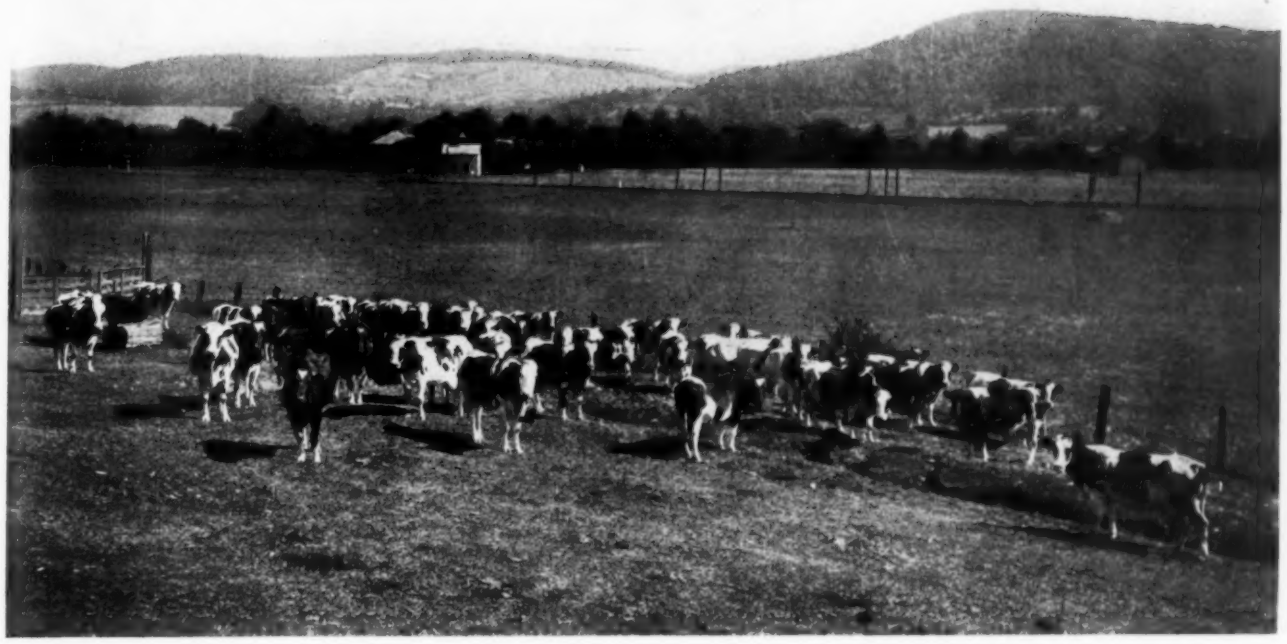
"Our physicians," says Doctor Hall, "are as well qualified as any in the world and superior to most. Nowhere are the hospitals superior to those in the United States. Our nurses are the equal of those found in any other country and far better than the great majority elsewhere. Our people have a higher intelligence level than any other nation. Our general health conditions are more favorable than those prevailing in foreign countries. Under these circumstances it is preposterous to contend that the United States loses more mothers due to childbirth complications than do other countries.

"The practice of statisticians in this country is to charge against the complications of childbirth practically all deaths that occur in connection with that event. Even if pneumonia, for example, is the immediate cause of a maternal death at about the time of childbirth, the fatality is charged against a complication of reproduction on the theory that pneumonia might otherwise have been avoided.

"In many foreign countries the practice is the reverse. Every excuse is used for charging maternal deaths to some other cause than the complications of childbirth. In England, influenza is invariably recorded as the cause of death if this illness attacks a mother about the time of a childbirth.

"An analysis of the Illinois statistics indicates that even the Federal statisticians lean unduly toward childbirth as the main factor in maternal fatalities. The Federal statistician always finds an excuse for charging a larger number of deaths to these causes than does the state statistician.

"If our maternal death rate appears to be higher than those in foreign countries it is because we prefer to err on the side of honesty."



Making the State Hospital Farm Pay Dividends in Health

By CLEMENT W. HUNT
Deputy Secretary, Department of Welfare, Harrisburg, Pa.

THE state hospital farm exists for only one purpose and that is to contribute to the well-being of the patients. Probably the idea of a farm in connection with a hospital was carried over from the almshouse or county home which the state hospital came to relieve in caring for the mentally ill. If that is true, then the purpose of the farm in the beginning must have been to give profitable occupation to the male patients.

The first state hospital in Pennsylvania was established at Harrisburg in 1848. And this hospital, like all of its sister institutions, began with a farm. It has been the practice in other states to provide farms in connection with the hospitals for mental patients.

Doctor Kirkbride published in 1880 his notable book on "Hospitals for the Insane." In this we find the following interesting statement as to the need and purpose of the state hospital farm:

"Every hospital for the insane should possess at least one hundred acres of land, to enable it to have the proper amount for farming and gardening purposes, to give the desired degree of privacy and to secure adequate and appropriate means of exercise, labor and occupation for the patients, for all these are now recognized as among the most valuable means of treatment. Of the total amount, as much as fifty acres immediately around the buildings should be appropriated as pleasure grounds, and should be so arranged and enclosed as to give the patients the full benefit of them, without being annoyed by the presence of visitors or other strangers, who should never be allowed to pass through them unaccompanied.

"It is desirable that several acres of this tract should be in groves or woodland, to furnish shade in summer, and its general character should be such as will admit of tasteful and agreeable improvements. To enable the patients generally to have the greatest possible amount of benefit from their pleasure grounds, when both sexes are treated in one building, those appropriated to the men and to the women should be entirely distinct. One of the best means of separating them will be found to be the appropriation of a strip of neutral ground between their separate limits, properly enclosed by an open palisade, as a park for various kinds of animals, or otherwise handsomely cultivated. While less than one hundred acres should be deemed too little for any institution, state hos-

TABLE I—MINIMUM SEASONAL VEGETABLE REQUIREMENTS (POUNDS PER CAPITA TO BE PRODUCED IN INSTITUTIONAL GARDENS)

Asparagus, Beans and Peas		*Leafy Crops*		*Root Crops*		*Others*	
Asparagus	1.3	Cabbage	20.5			Onions	37.2
Beans	7.1	Chard	3.0	Beets	5.1	Onions, green	7.5
Peas	1.0	Celery	4.1	Carrots	64.0	Peppers	8.0
	—	Endive	2.5	Parsnips	2.6	Pumpkins	4.7
	9.4	Kale	2.0	Turnips	18.7	Rhubarb	4.6
		Lettuce	6.0	Rutabagas	12.5	Squash	7.8
		Spinach	9.7	Radishes	5.0	Tomatoes	10.0
		Kohl-rabi	2.3				
					107.9		79.8
			50.1			Potatoes	189.0

pitals having a large number of farmers or working men will find it useful to possess at least double that amount; and extensive walks and drives on the hospital premises offer so many advantages that the possession of a large tract for this purpose alone is often desirable. It is hardly possible under any circumstances for such an institution to control too much land immediately around it."

In recent years hospital authorities have continued to recognize as highly important the purposes of farm land as expressed by Doctor Kirkbride. One hundred acres no longer suffice to satisfy the needs of the average state hospital. In the opinion of many the aim should be to provide at least one acre of land per patient. But for the most part, in the last twenty years hospital populations have been increasing more rapidly than the acreage of their land holdings.

It is possible now to determine on a fairly reliable basis how large a farm should be for an institution of a given capacity. The method presupposes a well qualified farm manager and a competent food administrator or dietitian who will work in harmony. The starting point is the food needs of the patients.

Milk is an essential food and it is generally agreed that each adult should have at least a pint a day. There are eminent authorities who advocate no less than a quart a day even for adults. As a minimum, then, a hospital with a population of 2,000 patients and employees will require 1,000 quarts of milk a day.

A herd of eighty selected Holsteins can produce the required amount of milk. This estimate is based on 46.5 quarts to 100 pounds of milk and an average production of 12,000 pounds per cow. An institution with such a herd needs approximately 750 acres of tillable land.

Again, scientific principles of feeding patients determine what kinds and quantities of vegetables shall be raised. The population of the institution and the average production per acre are factors in determining the number of acres that should be devoted to truck gardens and potato fields.

From the foregoing, it may be seen that it is possible to estimate with some assurance the required tillable acreage for a state hospital. In the intelligent use of this land standards and production records are indispensable. The Department of Welfare of Pennsylvania sought the advice of experienced food administrators and developed standard seasonal requirements for vegetables as

TABLE II—VEGETABLE PRODUCTION IN POUNDS PER CAPITA AT PENNSYLVANIA STATE HOSPITALS, 1930

	Asparagus, Beans, Peas	*Leafy Crops*	*Root Crops*	*Others*	*Potatoes*	*Total*	*Vegetables not Including Potatoes*
Standard	9.4	50.1	107.9	79.8	189.0	435.8	246.8
Hospital A	19.4	162.6	167.2	158.3	467.0	973.3	507.5
B	5.5	24.9	26.3	217.3	106.5	380.5	274.0
C	14.6	18.0	67.8	76.2	169.0	345.6	176.6
D	53.3	95.1	163.2	204.0	300.0	813.9	515.6
E	11.3	24.6	47.2	208.0	153.5	439.5	291.1
F	28.4	315.2	82.7	101.7	255.3	783.5	528.0
G	32.9	54.9	56.4	131.5	511.5	787.4	275.6
H	14.0	75.1	31.1	84.2	265.6	470.6	204.3

a guide in crop planning and in the feeding of patients. The standard requirements are set forth in Table I.

The standardization if vegetable requirements was begun four years ago in the state hospitals of Pennsylvania. The application of standards has served to enrich and to give variety to the menus for employees and patients to a marked degree. Using the standards as a guide the crop program for 1931 was planned with a view of producing a better balanced vegetable diet for the patients.

Haying provides a vigorous and healthful occupation for the mental patients on this Pennsylvania state farm.

Of course crop yields vary greatly with the weather conditions of the growing season. Each institution must draw on its crop records over a period of years and arrive at an average production per acre for each crop. This average used in connection with the standard requirement indicates the acreage to be devoted to a given crop. Table II reveals the vegetable production of the state hospitals of Pennsylvania in 1930. It will be seen that the problem of overproduction sometimes troubles even the management of a state hospital. At the same time it emphasizes the importance of intelligent crop planning.

Lack of adequate variety in the institutional diet certainly affects the health and happiness of patients and employees. The farm affords the means of providing a wide variety of vegetables and fruits. Again, there must be intelligent planning on the part of the farm manager and food administrator working together. The food needs of the patients must always be the controlling factor in the crop program.

It is usually enlightening for one to make a survey of his methods in the light of what others are doing. It was a revelation to the superintendents of the state hospitals of Pennsylvania to see the data contained in Table III, particularly for the month of June. It will be observed that the hospitals that had the lowest number of vegetables in June were among those with the highest in August. This was due not alone to the advancing growing season but quite as much to the desire of the superintendents of these hospitals to compare favorably with the others.

The state hospital farm is maintained primarily for the benefit of the patients. It affords them privacy, recreation and healthful occupation, all of which contribute to their well-being. Farming as a business enterprise is of secondary impor-

tance; in the final analysis the economic value of the hospital farm is measured not in dollars and cents but by its contribution to the restoration of patients to mental health.

The farm, however, should lose none of its therapeutic value if operated profitably. A record crop of potatoes and a banner yield of vegetables are an inspiration to the patients who participate in farming activities as well as to the employees. A high producing herd of registered cows contributes even more to the occupation and joy of patients than does the ordinary unprofitable herd. Farming for profit is not inconsistent with farming for the mental health and restoration of patients.

Profitable farming to-day is scientific farming. More and more state hospital farms are coming under the management of trained farm managers. These farms are in many instances under the general supervision of an agriculturist on the staff of the central department or board of control. Under such a plan, adopted by the Department of Welfare of Pennsylvania four years ago, notable progress has already been made. This can be seen in the record of milk production in Table IV. The reports are based on the tests of the cow testing associations to which all of the hospitals now belong.

During the years indicated an aggressive program to eliminate contagious abortion from all the herds has not only removed that hazard from all but one of the hospitals listed in Table IV, but it has also hindered the increase of production. The latter is due to the number of heifers in herds from which most reactors to the blood test have been removed. For the past two years the average replacing of older cows with heifers in the herds under the supervision of the department of welfare has amounted to 20 per cent.

TABLE III—NUMBER OF VEGETABLES RAISED AT PENNSYLVANIA STATE HOSPITALS IN THE SUMMER OF 1931

	June	*July*	*Aug.*	*Sept.*
Hospital A	12	14	18	16
B	5	8	18	18
C	13	13	15	14
D	11	11	16	14
E	8	10	18	19
F	8	14	19	17
G	11	15	14	14
H	12	14	14	14

A breeding program adopting the Proven Sire Plan is being inaugurated by the state institutions of Pennsylvania under the leadership of R. Bruce Dunlap, agriculturist in the department. Any bull calf that measures up to certain standards in the judgment of a committee of competent judges is given special attention. At the age of a year he will be placed with a reputable farmer in the community for a period of four years during which time his daughters will be tested for milk production. If four or more of the daughters each produce at least 14,000 pounds of milk a year on a mature basis, the sire will be recalled for breeding purposes by the institution that placed him out or he will be assigned to another state hospital. This plan has worked with notable success in outstanding private herds.

TABLE IV—INSTITUTIONAL DAIRY PRODUCTION, POUNDS OF MILK PER COW FOR YEAR ENDING MAY 31

	1928	*1929*	*1930*	*1931*
Hosp. A*		6,002	5,860	6,292
B	9,449	7,660	8,242	9,137
C	6,870	6,990	8,370	9,474
D	12,713	10,558	9,554	9,723
E		8,359	10,857	10,018
F	10,415	11,556	10,712	10,667
G	8,964	9,176	10,003	11,300
H	7,422	7,548	9,426	11,594

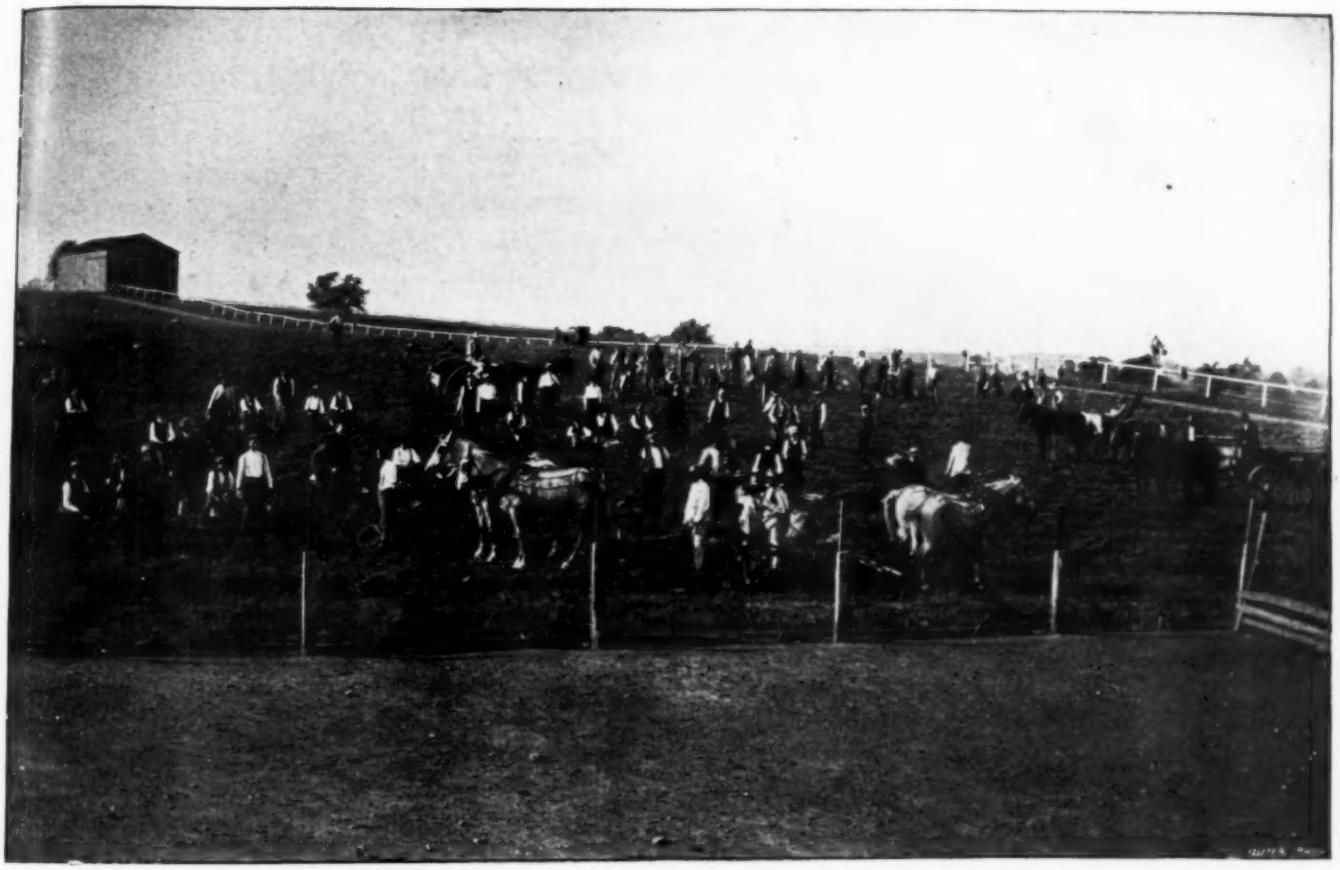
*This institution has been changing from Guernseys to Holsteins.

The question is often raised as to whether institutional farming pays financially. This is difficult to answer for there are so many factors to take into account. It would be possible to answer the question if an elaborate system of cost accounting were used successfully. It must be remembered, however, that institutional farming includes several specialized activities operated on an extensive scale, such as the truck garden, the dairy and the piggery. The accounting is further complicated by the use of patient labor on which it is difficult to place a value and by the shifting of paid employees from one activity to another, even in the course of one day.

Estimating Costs

It is possible to determine by fairly simple accounting the unit costs of production based on direct expense for labor, feeds and fertilizers. It is also feasible to study intensively the cost of operating one activity, such as poultry keeping one year and another activity the next year. The first concern of the management of a state hospital, however, must always be the patient, and the purpose of cost accounting is of value primarily in saving money in all activities so that more and more can be devoted to the direct care and treatment of the patient.

Poultry keeping is a farm activity that makes



A large number of the patients at the Norristown State Hospital, Norristown, Pa., are shown here participating in the harvesting of a record crop of potatoes.

an important contribution to the state institution. If the institutional poultry plant is managed by a competent man who avails himself of the consultation services of specialists connected with state departments and the agricultural colleges, then it is reasonable to expect the poultry yard to produce its products at a cost well below wholesale prices. It is altogether likely that poultry and eggs will be fed in greater quantities to patients if produced on the state hospital farm than would be the case if they were purchased outright.

The raising of hogs is worth while, for hogs consume the garbage from the kitchens which would otherwise be a loss to the institution. Disease so easily and quickly ravages a herd of swine that the utmost care must be exercised at all times. Here, again, close contact with specialists is imperative if the raising of hogs is to be made worth while.

Certain of the state hospitals in Pennsylvania have been experimenting with the feeding of steers. Receipts from the sale of surplus products are paid directly into the state treasury and are not credited for the use of the hospital that makes the sale. By feeding surplus grain and forage to steers the management realizes on that which would otherwise be lost to the institution. Incidentally it has been discovered that the purchase of steers for fattening is more profitable for the commonwealth than the sale of the surplus products.

How the Community Benefits

The state hospital farm can render an important community service. It is usually managed by a trained man who is always in contact with the department of agriculture, the state agricultural school, the farm bureau of his county and other agencies disseminating information regarding the latest approved methods of farming. The farmers in the vicinity of a state hospital are in a position to witness the actual application of the best principles and methods in agriculture.

The Danville State Hospital, Danville, Pa., affords an example of an institution that keeps in close touch with its farming community. It not only demonstrates successful methods of farming to those who visit its farms, but each fall the management invites the farmers from miles around to attend a picnic in the hospital grove. This rally not only builds up a wholesome neighborly spirit but contributes to a more progressive attitude in farming throughout the community.

Where Is the Dietitian's Best Field of Service?

By KATHERINE MITCHELL THOMA
Dietitian, Michael Reese Hospital, Chicago

THE American Dietetic Association was organized in 1917 by forty-two charter members. In the fourteen years that have passed since then, the membership has grown to 2,000. Yet, in spite of this remarkable growth, there is still considerable confusion in regard to the definition of "dietitian."

Dietitians are offshoots of home economics—women trained in foods and nutrition and allied sciences who have become interested in feeding the sick and in teaching nurses how to prepare food for the sick. As early as 1893, the managers of Presbyterian Hospital, Philadelphia, engaged as "superintendent of diet" Martha G. Byerly, a graduate of Mrs. Rorer's Normal School. Miss Byerly's function was to instruct and supervise the nurses in the preparation of food for private room patients. At Mrs. Rorer's school, students were given lectures on chemistry, physiology and hygiene as well as excellent instruction in cooking. Mrs. Rorer's students were even taught that diabetics must not have sugars and that nephritics should avoid an excess of protein.

Pioneering

At that time the word, "dietitian," did not appear in Webster's dictionary. Home economics or domestic science was in its infancy. It was with the development of chemistry of foods and through the great strides which investigators made in the study of normal nutrition, and diet in disease, that interest in scientific feeding became widespread. Gradually a few more pioneers encouraged by the more progressive directors of hospitals went into hospital work, and the word "dietitian" was coined. With the organization of the American Dietetic Association in 1917 one of the earliest problems attacked was an outline for the training of student dietitians. It was a problem that could not be solved quickly or easily. Since the work offered to student dietitians in hospitals must be based on the preparation given in schools of home economics, leading educators in that field helped the dietitians to draw up the essentials to be included in the college preparation and hospital training for dietitians. Recommendations were made from year to year, but it was not until 1927 that a definite outline of a course for student dietitians was approved by the American Dietetic Association.

Training the Hospital Dietitian

There is no place in a discussion such as this to include the details of the outline finally accepted. Copies of the outline and lists of hospitals following the standards set are available at the office of the American Dietetic Association. It is necessary, however, to review briefly the main points. The outline requires:

1. That all students have a bachelor's degree with a major in foods and nutrition from a college of recognized rank.
2. That the hospital training student dietitians be large enough to offer a variety of experience in diet therapy and food administration for both private and ward patients.
3. That the hospital employ a sufficient number of dietitians to supervise the work of the dietary department and to allow adequate time for instructing the student dietitians.
4. The hospital must maintain a class of at least two students.
5. That the period of training extend over at least six months.
6. That in the six months, by practical experience, by class work, by conferences and by study, the student be given thorough preparation in the application of diet therapy, in administrative food problems and in the teaching of student nurses. Clinic or social service work is listed as desirable but not as an essential requirement.

That six months is a short period in which to cover the territory properly is obvious to anyone who is familiar with the complexities of hospital diet work. For this reason, many hospitals following the outline as approved by the American Dietetic Association have lengthened the course. Instead of the minimum six months, eight months', nine months' and twelve months' courses are now offered to the students. With the additional

months allowed, more thorough preparation is possible, including an introduction to food purchasing, additional practical experience in administrative problems and an increased opportunity for the study of diet therapy, for laboratory work and for social service.

In the longer courses, provision is made for one, two or more months' experience as supervising dietitians. Students finishing such courses are well equipped to go directly into a position of responsibility. They have been a part of a dietary department long enough to know and understand the problems to be met by the hospital dietitian. They have planned menus, purchased supplies, worked with patients; they have assisted in the courses given to student nurses and for a fair period of time have carried definite responsibility. They should not be described as "inexperienced."

Who Can Qualify?

The establishment of standards for the training of student dietitians in hospitals has clearly outlined the qualifications of a hospital dietitian. Hospital superintendents employing a dietitian who is a graduate of an approved course can have a definite idea of her background and what she is prepared to do on her job.

Hospital work is not the only field open to dietitians. A steadily increasing number of women trained in foods and nutrition are being employed in other lines of work. Nutrition workers for the American Red Cross, the public health institutes, for tuberculosis societies and for infant welfare associations are all examples of the direct educational work being done by these women. In some cities, similarly trained young women have been engaged to take charge of the nutrition work in the public schools. Women trained in foods, nutrition and chemistry are also employed by commercial food houses as food educational directors or consultants. In each of these fields, women are doing work of definite educational value: in the first list, to selected groups; in the second, to the general public.

Professionally trained women are also being engaged to supervise the feeding of groups in boarding schools, in fraternity houses, in college dormitories. This group can do much to maintain the general nutrition of the individuals fed. They are also doing educational work indirectly by examples of adequate diet in the meals served and directly by lectures on health and nutrition, given by the dietitian in charge of the food.

Because of the numerous opportunities that are developing for women trained in food and nutrition, the American Dietetic Association has defined "dietitian" so that the definition will include all those qualified to be called "dietitian." The definition of the term recommended by a special committee of the American Dietetic Association and adopted in 1930 reads as follows:

"Any person who is qualified for membership in the American Dietetic Association is, by virtue of uniform basic training and required experience, entitled to be designated as a 'dietitian.' Such persons are being employed in the following capacities: by organizations such as the American Red Cross, tuberculosis associations and others of a similar nature interested in promoting educational work in good food habits, normal nutrition and positive health; by hospitals and sanatoriums, in which so far as possible the principles of normal nutrition are to be applied in feeding sick persons; the dietitian may be engaged in administration, diet therapy or teaching; she may instruct medical students, nurses, student dietitians, in-patients or out-patients; by schools and colleges, hotels, clubs, cafeterias and lunchrooms, as managers of food service, business managers, directors of residence halls and other similar positions; by food manufacturers and distributors of food, in the research field or in educational and advertising work; by colleges, universities and normal colleges, as teachers in nutrition, or in research work."

Planning a Successful Diet Régime for the Food Clinic Patient

Before the patient, adult or child, is admitted to the food clinic, he should first have a complete physical examination in the medical clinic, with all the necessary laboratory tests, according to Frances Stern, of the food clinic, Boston Dispensary.

The patient's record, sent to the dietitian, then, contains the findings from all clinics he has visited, and also the physician's diagnosis and recommendation for food treatment. This gives the dietitian the necessary data on which to base a diet.

The location of the food clinic is important. It should be placed for easy communication with the physicians of other clinics, and it should have a space of its own. It should provide a cheerful and friendly environment for the patient who, in such an atmosphere, is moved to talk freely about those things the dietitian needs to know. In this way, the dietitian obtains the data she needs for a nutritional history. This becomes a part of the general record. The history presents a composite picture of the social, mental, physical and economic factors that concern the patient.

How a Chicago Hospital Trains Its Student Dietitians

By ANNA E. BOLLER

As already shown by Mrs. Thoma, some of the hospitals are lengthening their student dietetic courses. Michael Reese Hospital, Chicago, has been one of the pioneers in offering a course requiring a year. This, of course, offers an opportunity to include more intensive work in all the phases that can possibly be given in the shorter courses.

The outline of the course states that it is the purpose of the hospital to give "to students who are already trained academically in college chemistry, nutrition and dietetics, opportunities for the concrete study of institutional and hospital problems."

Because of the size and type of Michael Reese Hospital, it has so much to offer to students that it might be interesting to see just what is included in the outline. It is a general hospital of 654 beds, of which 289 are for private use. About a fourth of these private beds are in a separate unit, where the patients receive "the excellent service of an exclusive hotel." In addition to this large number of private rooms, there are large medical and surgical wards. The milk laboratory is in a separate hospital, known as the Sarah Morris Memorial Hospital for Children. Students also have an opportunity to work in the Nelson Morris Institute for Medical Research, having not only the privilege of working with the hospital chemist but also of using the extensive medical library in that building.

How the Work Is Divided

The work of the dietary department is divided into three major phases: (1) administrative, in the control of the general food problem; (2) medical, in the scientific dieting of patients; (3) educational, in the teaching of student nurses, and in the instructing of patients in regard to their diets and general nutrition.

The division of the dietary department is made as follows: the office; the main kitchen; the metabolic kitchen; the milk station; the serving rooms and the dining room; Meyer House—the office, the main kitchens and the serving rooms; the dietary department in the Emanuel Mandel Clinic.

The students are privileged to make use of all facilities for study at Michael Reese Hospital, which includes not only the dietary department, with which each student becomes entirely familiar, but also contacts with every department of the hospital. The teachers stress the importance of the fact that the work of all departments must dovetail in the accomplishment of the hospital's main purpose—the care of the sick.

What Therapeutic Diet Study Includes

The therapeutic diet work, which is such an essential part of the course, is outlined as follows:

I. Diets—three months.

At Michael Reese Hospital all therapeutic diets are planned and served as a modification of the normal diet. Under the supervision of the therapeutic dietitian the student writes the menus for the therapeutic diets basing the menus on the general diet menus. The food is prepared and distributed from the main kitchen. Each student is assigned to a division of the hospital. Supervised by the dietitian she visits the patients, reads their histories, thus becoming perfectly familiar with the condition, the nutritional requirements and food preferences of each patient. With this information she can intelligently serve the tray of each patient, modifying amounts and foods to meet individual requirements and therapeutic diet indications.

During her frequent visits with the patient she learns his home diet habits and makes corrective suggestions as indicated. When advisable she gives the patient written diet instructions. In this manner she works with all types of patients: patients on full diet, patients on post surgical régime, as well as patients for whom diet therapy is a major part of his hospital care, such as gastric ulcer, nephritis, anemia, obesity and hypertension. Students do not spend the whole period on one division. They are transferred so that they may acquire a greater variety of experience with different types of sickness.

Students keep diet histories on all patients on the division and select one patient from the group for a complete case study. Case study includes a

report of the patient's social condition, detailed medical history, treatment, progress and prognosis, and a discussion of the principles of diet therapy involved in treatment. A bibliography of the subject is also included.

During the third month, each student acts as an assistant to the therapeutic dietitian, carries more responsibility and helps in the supervision of the younger students.

II. Metabolism Kitchen—one month.

In the metabolism kitchen all weighed diets, mostly for diabetic patients, are prepared. Supervised by the dietitian, the students calculate the diets and weigh and prepare the food. Students assist in giving instructions and demonstrations to patients. Each student writes a case study of a diabetic patient.

III. Milk Station—one month.

In the milk station in the Sarah Morris Children's Hospital of Michael Reese Hospital the student has an opportunity to study the preparation of the infant formulas. The student's understanding of the methods employed is tested when she is allotted a part of the responsibility of teaching others. In addition to this practical knowledge she will get an idea of the nutritional disorders requiring special types of feeding by ward rounds with the dietitian and by outside reading.

Laboratory and Clinic Experience Essential

The problem of feeding children between the ages of two and fourteen is observed in daily visits to the children's wards. At this time each student has an opportunity to exercise her own ingenuity in working out methods of teaching good food habits to the children.

IV. Hospital Laboratories—two weeks.

The student dietitian spends two weeks observing in the hospital laboratories located in the Nelson Morris Institute for Clinical Research. Here she has a chance to see the chemical analysis and the correlation of the findings with dietary management. She observes blood, urine and gastric analysis. She is taught the method of basal metabolic rate test. In addition to the routine laboratory work she also has an opportunity to observe and perhaps participate in nutritional research problems.

V. Mandel Clinic—one month.

The Mandel Clinic offers the student an opportunity of working with out-patients, of correlating social and nutrition work. The student dietitian acts as assistant to the clinic dietitian while in the clinic. Besides assisting in the individual dietetic treatment she also: (1) conducts classes and demonstrations for diabetic and gastro-intestinal patients both in the clinic and the hospital; (2) observes the procedure in various clinics as metabolic, gastro-intestinal, fluoroscopic examinations and protein sensitization; (3) conducts health class for children; (4) gives Ewald meals, watches aspirations and laboratory tests; (5) is taught to administer insulin. One case study of a clinic patient is required of each student while she is in the clinic.

Classes Cover a Wide Range

An extensive outline of class work includes such subjects as normal nutrition and diet therapy; marketing; equipment; lectures by members of the medical staff on gastro-intestinal conditions, on diseases of metabolism, on food allergy, tuberculosis, anemia and other ills that require diet therapy in their treatment; relation of nutrition work to social service work; relation of the work of the dietary department to that of the nursing staff; relation of the dietary department to hospital administration.

One of the features of the course is the lectures on marketing given by Faith McAuley and on equipment by Miss B. Smith, both of the institutional economics department of the University of Chicago. Each gives ten lectures of two hours.

The administrative experience is rather completely outlined as follows:

I. Main Kitchen—one month.

Under the supervision of the dietitian in charge, the student has the opportunity of observing the problems of preparing and distributing food for 800 people. This will include the ordering, checking and care of supplies, the preparation of food and the distribution of food. Food for the patients is distributed in bulk in electrically heated carts. Each cart is filled according to the cart slip made from the divisions census of patients. This method of distributing the food in bulk may be compared later with the modified central service to be observed in Meyer House. Food for the employees and the staff is sent in containers to the steam tables in the serving kitchen.

The student is given experience in the supervision of employees, in the correlation of their duties and in a computation of their wages, hours and similar matters.

The student makes a careful study of the floor plan, layout, walls and floor, lighting, ventilation and of each piece of equipment, noting particularly the manufacturer, the material, its uses, its good and bad points, the methods of cleaning and other types of the same equipment.

Special problems are studied such as the relationship of one menu to the other, the relative cost of the different menus and how to figure the per

capita cost for one week of the food used in the main kitchen.

II. Storeroom—one month.

The student works with the purchasing agent and the dietitian in the purchase of foods, including trips to the wholesale markets, the method of receiving and caring for food supplies, the supervision of the storeroom and butcher shop and methods of distributing and checking out supplies from the hospital storeroom. She becomes informed concerning the unit of purchase of different foods, the percentage of shrinkage in original package and the number of servings.

III. Serving Room—two weeks.

Under the supervision of the dietitian in charge, students study the routine of the serving room, noting particularly the number of employees in proportion to number of persons served, the correlation of the duties of employees, and the equipment. Large equipment in the main kitchen is studied and a special study is made of dishes, silver and linen. The cost of replacement, the type of china and silver used and the cost of laundry are particularly noted.

IV. Meyer House—six weeks.

Meyer house, the private room pavilion of Michael Reese Hospital, is a step away from the traditional hospital atmosphere. Charmingly and attractively furnished, it is equipped to give patients the excellent service of an exclusive hotel and at the same time sacrifice none of the hospital technique essential to the welfare of the patient. Students observe the many interesting phases of organization of the dietary department in Meyer House and study the per capita cost of food as served from the à la carte menu, the per capita service cost and the cost of the dishes, china and silver as compared with the cost of the simpler service in the main building of Michael Reese Hospital. In the kitchen and serving rooms of Meyer House the students study the floor plan, the layout of the equipment, the walls, the floors, the lighting and the ventilation as well as each piece of equipment. This kitchen is much newer than the kitchen in the main building and offers a basis for many interesting comparisons.

Acquiring Practical Experience

Special studies include drawing a floor plan with equipment, a study of per capita food cost and one of per capita service cost.

V. The Office—two weeks.

In the office the student has an opportunity to study the organization of the dietary department as a whole to see the tie-up of all units of the department and to appreciate the relation of the dietary department to the hospital as a whole.

The student "listens in" while the administrative dietitian writes the menus for the general diet for hospital patients and the menus for employees and staff. After receiving instructions, each student writes a complete set of menus. Students also spend time in the auditor's office to learn about methods of recording bills, and of figuring the cost of foods and of supplies.

Students attend the weekly conferences of superintendent, chief dietitian, administrative dietitian, main kitchen dietitian, Meyer House dietitian and purchasing agent, at which the quality of food, the weekly food bills and the monthly per capita of food costs are discussed.

VI. For one month, each student acts as supervisor in one of the units of the dietary department.

Frontier Nursing Service Asks Aid in Its Relief Work

A drive for $100,000 is now in progress to further the work of the Frontier Nursing Service, according to an announcement by Mary Breckinridge, director of the service.

Twenty-eight mounted nurse-midwives are at present serving in nine isolated communities in the mountainous regions of the South.

The life of the frontier nurse is as hazardous and adventurous as that of the "mounty" of the Far North. She must travel a country where there are no roads and no bridges, and she must travel on foot or by horseback.

Like the mounted police, the frontier nurse has a slogan, "If the father can come for the nurse, the nurse can go with the father." No matter what the time, the weather, the weariness, if someone comes for her, the nurse goes.

She knows nothing of the eight-hour day. Like the old time family physician she is on the job as long as she is needed. The frontier nurse is not a physician but she is the next best substitute in a country where there are few doctors or none. She is a graduate nurse, a graduate in public health work, and, in addition, she is a graduate midwife.

The summer brings the need of redoubled effort on the part of the Frontier Nursing Service. There are some 4,000 children of the mountain region at this time who are entirely without milk, and deficiency diseases are spreading almost entirely unchecked.

For the present, because of this, the educational program of the service is being laid aside for intensive relief work, and its funds are being appropriated to provide milk and cod liver oil for the children.

How Shall the Hospital Care for Patients' Belongings?

By JOHN S. BOGGESS, M.D.
Medical Director in Charge, U. S. Marine Hospital, Louisville, Ky.

ONE of the problems that constantly confront the hospital administrator is the care of patients' effects, including money and valuables as well as clothing and similar articles. The best method of solving the problem depends upon many variable factors. Each hospital executive must evaluate these factors and decide which method is best suited to his individual case.

To classify the different methods would simplify the administrator's task. This, however, is difficult or impossible, because of the number of variants that must be considered. In any event, a discussion of the factors involved may be of service in helping the executive to arrive at a decision as to the best method to be used. While much of the experience upon which this article is based has been received in the administration of United States Marine Hospitals, where there are factors that are peculiar to these institutions alone, an effort has been made to make the discussion general in order that it may be helpful to all hospital administrators.

Certain requirements seem to be common to all institutions:

1. Duplicate and completely itemized inventories should be made of all articles that pass into the custodial care of the hospitals. One copy should be retained by the hospital and one given to the patient, and the patient should sign and thus authenticate the correctness of the inventory.

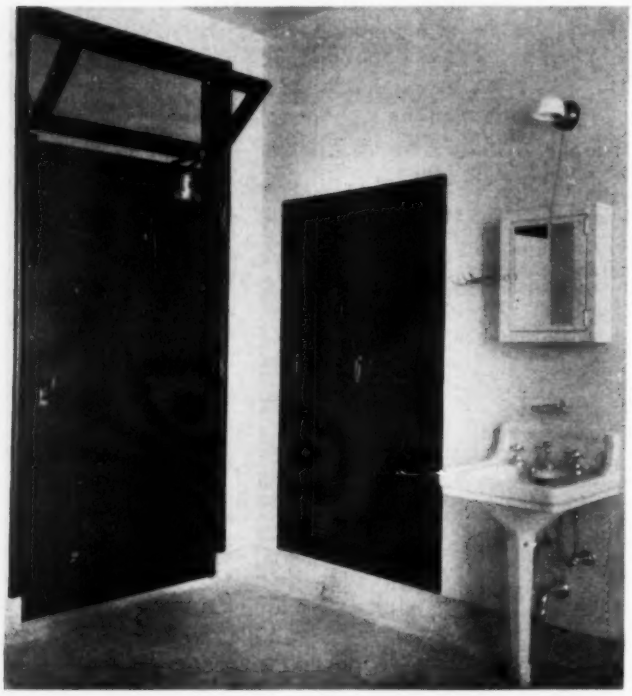
2. In order to protect itself, the hospital should provide appropriate facilities for the safe keeping of the patient's personal belongings.

3. The hospital should receive from the out-

This private room in the Akron City Hospital, Akron, Ohio, has been well provided with compact though roomy storage space for the patient's clothes and other belongings.

going patient—and keep as a record for its own protection—a receipt for all articles returned to the patient.

For convenience, records No. 1 and No. 3 may be combined in one form, sufficient space being provided for recording any issues to or deposits by patients subsequent to the issuing of the original receipt and prior to the patient's final discharge. Such memoranda, on both the original and the duplicate copies, should be signed or initialed by the patient or the appropriate hospital representative. It will be found convenient to provide these forms, serially numbered in duplicate, bound in books or pads, so that the original and duplicate may be written simultaneously. As an alternative, it will be somewhat cheaper not to have the forms numbered in duplicate at the time of printing, a blank space being provided for inserting the serial number at the time the receipt is made out.



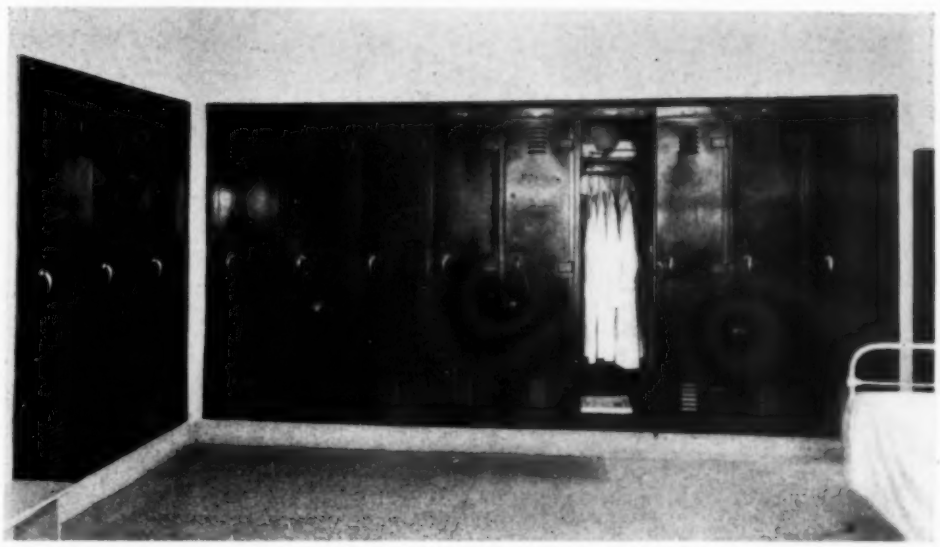
Two types of lockers in use in hospitals are illustrated on this page.

It is advisable, unless the patient is unconscious or is critically ill at the time he is admitted, to have him take with him to the ward a small amount of money to cover the cost of tobacco and other small purchases he may make while he is in the hospital. Only a thoroughly reliable employee should supervise and be responsible for the receiving, safe keeping and returning of deposited articles, and many institutions find it desirable to bond such employees. Since this is the first important point of contact between the patient and the institution, it is a sound policy for the hospital to take all possible steps to make the first impression a favorable one, as well as to render impossible any grounds for ill feeling or complaints of dishonesty or injustice.

How Valuables Can Be Stored

In the vast majority of cases the bulk of money and valuables for each patient will not exceed the capacity of a box 10 by 5 by 4 inches, although this will vary with the economic and social status of patients. Whatever the capacity of the box, the hospital will find it economical to store it in a fireproof safe with a combination lock. There should be compartments for the boxes, which preferably should have hinged lids. This is standard office equipment and can be obtained comparatively cheap. The boxes should be plainly and conspicuously numbered on the front ends, which should have a ring or handle by which they may be withdrawn from their compartments. For convenience, the receipts should show the number of the box containing the articles receipted.

An alternative method, which is quite as good but not so convenient, is to use, instead of individual boxes, large manila envelopes which should bear the name of the patient, the hospital admission number and any other pertinent information. If this system is used, it will save time to have printed on the outside of the envelope the exact form of the receipt, so that when the original receipt is written, if a carbon paper is used, the envelope will be made a duplicate receipt and serve as the hospital copy. Unless the envelopes are used, it may be found advisable to keep copies of the receipts (as long as the articles are on de-



The special nurses' locker room at the Toledo Hospital offers convenient facilities for the belongings of the nurses who do not reside at the nurses' home. Dressings are stored in the large cabinets pictured below, at St. Joseph's Hospital, Aurora, Ill.

posit) in some place other than the safe in which the valuables are kept, in order to give double protection in case the safe is robbed and the records are destroyed or carried away which would make tracing and recovering the stolen articles difficult.

Other personal effects may include clothing of all description, hand baggage and even trunks. Among the many factors to be taken into consideration in deciding upon the method to be employed in caring for such effects, the following may be mentioned: (1) capacity of the hospital; (2) economic and social status of the average patient; (3) policy of the hospital with regard to retaining patients until they are able to resume their usual occupations; (4) policy with regard to giving convalescent patients passes for leaving the hospital for short periods before their final discharge; (5) possible facilities in both the receiving unit and in the wards for safe storage; (6) methods of available storage; (7) available personnel; (8) whether or not there are many admissions of emergency and night cases; (9) whether or not patients are required to surrender their outer clothing for storage and wear hospital clothing.

Methods Vary With Type of Hospital

It is not practicable to consider all of these factors separately, for they are all more or less correlated, depending upon the cases. For example, if the hospital is a small one with a high class clientele, the methods will differ markedly from those of the hospital with a different type of clientele. On the other hand, if it is a large institution, even with a high type of clientele the methods will necessarily be more rigid than they would be in the smaller hospital with the same class of patients. If some of the patients are free patients the proportion of such patients and the percentage likely to be vermin infested or to be wearing garments on admission that would require to be laundered before they were again suitable for use would all have to be taken into consideration. The proportion of night admissions and emergency cases would have an important bearing upon the methods to be used. If convalescent patients are permitted to leave the hospital, in which case they will require some of the articles that are in safe keeping, ready accessibility to the storage room is highly desirable,

whereas in other cases this factor might be unimportant.

Generally speaking, it must be decided first whether the personal effects are to be stored at the receiving unit or taken to the wards. The former plan will be considered first, and the weighing of the various factors would be something like this: If the hospital is going to undertake the repairs and renovation of badly damaged and soiled clothing (often desirable in institutions that have a large proportion of free patients), provision should be made for this to be done with the minimum of work and under safeguards to ensure that the articles are added to the other effects of the patient when the work is completed. Written records should show that this has actually been done.

How Articles Should Be Stored

There should be adequate facilities for hanging all outer clothing on forms, never on hooks or nails, so that when the patient is discharged his clothing will present a creditable appearance. Probably the easiest method of identifying clothing that is hung on forms is to attach an identifying tag to the nearest available portion of the outer garment on each form. The clothing storeroom should be made safe by appropriate locks, and bars if necessary, and unauthorized persons should be strictly prohibited from entering it. The work in the clothing storeroom will be facilitated if there is provided a series of shelves with compartments large enough to contain a travel bag and such articles as are not hung on clothing forms. Each bag, bundle or trunk should be tagged with the name of the owner and the number of the receipt. If the bag is locked and the patient retains the key, the container should appear on the receipt as "contents unknown," while if the container is unlocked or the key deposited, the contents should be itemized.

Before they are stored, all articles should be thoroughly examined to ascertain whether they harbor vermin. If so, they should receive appropriate treatment. The storeroom should be readily accessible, well lighted and ventilated, and all the contents should be protected against damage by vermin and moths. If possible, all shelving, racks and other equipment should be of metal. If the patient's effects, other than money and valuables, are to be cared for in the wards or through ward administration, they should accompany the patient to the wards under such circumstances as to disprove any claim that might be made that all the effects on admission to the receiving unit were not listed on their receipt in the ward.

Frequently there is not available in or near the ward an appropriate room large enough to store the effects in the manner previously described, in which case a series of individual metal lockers (standard office equipment) may be utilized for the purpose. Such lockers are verminproof, they afford adequate protection and are economical of space, since one or more may be placed in otherwise unused spaces. They should be numbered conspicuously, and the ward records should show which locker contains the effects of each patient. It is important not to have any changeable number or name appear on the locker. This prevents any access to lockers containing the effects of other patients. Unless the lockers are in a locked room, they should be so placed that they may be under more or less constant observation in order to discourage attempts to gain unauthorized access to them.

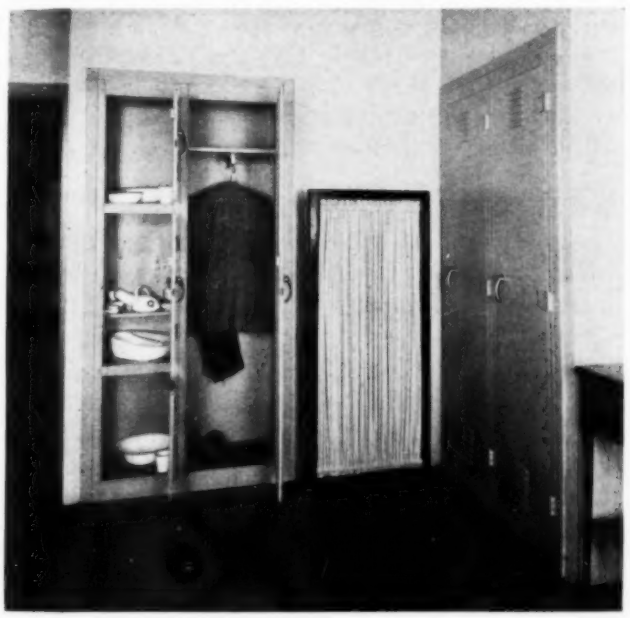
The method of closing these lockers is a difficult problem. If there is a master key, its possession must be most carefully guarded. It is highly inadvisable to let a ward attendant or patient ever have such a key in his possession, because of the ease with which duplicates may be obtained. Once an unauthorized duplicate is in existence, the safety of the contents of all the lockers in the set is jeopardized, and the entire set of locks is rendered practically useless. It is probably cheaper and better in the long run for the locker doors to be supplied with hasps, and for the hospital to provide locks and a master key for each ward set. The use of such equipment may be continued with comparative safety for an indefinite period, and, should an unauthorized master key be made, the set of locks can either be transferred to another ward or destroyed, since the cost of replacement is small in view of the safety thereby secured.

Locking the Lockers

It would be better still to use permanently installed combination locks on the inside of the locker doors. Cheap and efficient locks of this type are now on the market. Certainly they would eliminate the use of keys with their attendant danger of loss or duplication. In view of the fact that a three-digit combination has a possibility of more than 1,100 combinations, the combination of any lock could be changed easily and quickly in the interest of safety whenever desired. Another advantage of the combination lock system is that it not only does away with the trouble and expense of keys, but that it obviates the necessity of writing the combination of lockers (although this could be done with safety if the record were kept in the central office safe), since the combinations of each set could be made in accordance with some easily remembered key plan which should be

known only to one or two reliable persons in each ward. This could be altered from time to time as necessary.

Another plan that may be carried out in the wards for the care of clothing and personal effects other than money, valuables and hand baggage or other bulky articles, is the use of a horizontal locker, preferably metal, with a hinged lid which is suspended from and under the patient's bed. This locker is supported by rollers attached to each end which rest on a track firmly attached to the side rails of the bed and so constructed that



The belongings of three patients are safely and conveniently stored in the three cabinets pictured here.

the entire locker may be pulled into the bedside space. Such a locker should be long enough to permit a pair of trousers or an overcoat to be laid out lengthwise without folding.

This plan has many advantages to recommend it such as the following: comparative safety of the contents without the use of a lock, since it is impossible to roll the locker into the bedside space to gain access to the contents without its being seen by the patient and other persons in the room; it is inconspicuous and not unsightly; it relieves the ward personnel of much labor in connection with the care of such effects; it does not interfere with the cleaning about the bed; it takes up no room except when it is open; the patient's effects automatically accompany him when he is transferred to another ward; it eliminates the necessity for keeping records of the effects. Absolute safety of the contents may be assured by the use of locks and keys or combination locks. The greatest objection to the plan is the first cost; but if the necessary funds are available, it is believed that the outlay will be fully justified by the many advantages.

With regard to the care of the effects of patients occupying single rooms, rooms for one patient are usually provided with adequate closets, and this, together with the necessarily reduced number of persons entering such rooms, will probably give the desired safety. However, the plan of horizontal lockers hung under each bed is quite suitable for private rooms whether they have clothes closets or not.

One important fact that should be kept in mind in planning new hospitals is that the patient's effects cannot be kept securely and conveniently unless the hospital authorities first decide upon the plan to be used and then provide for it in the building plans. Too often the subject does not receive proper consideration until the building is ready for occupancy, and then some makeshift plan must be improvised that will always remain as unsatisfactory as it is inconvenient.

Radio Pillows for 105 Army Hospitals

"Radio pillows," small receivers encased in sponge rubber with an outlet to permit undisturbed reception, with individual volume control, will be used by the Department of War in furnishing radio entertainment to all patients in army hospitals, the department has announced. Programs will be distributed from a central receiving set in each hospital.

The radio receiving equipment will be installed in 105 army hospitals located throughout the United States, Panama, Hawaii, Porto Rico and the Philippine Islands. The chief signal officer is charged with the preparation of the estimates and supervision of the installation which is to be completed in 1935.

Present plans provide for a central receiving set in each of the hospitals. By means of electric cables to each bed, programs will be sent to the individual patients who will be provided with high quality head sets or "radio pillows."

Recent tests of these pillows indicate their entire practicability for this purpose. Individual volume control devices will be installed to enable the patient to adjust the volume of the reception.

Due to heavy static, reception of ordinary broadcasts in Panama, Porto Rico and the Philippines is unsatisfactory. A number of short wave receivers will be supplied the hospitals in these places for the reception of programs broadcast in the United States and foreign countries.

Out-Patient Departments and Clinics Fight Depression

By MARGARET LOVELL PLUMLEY
The Julius Rosenwald Fund, Chicago

WHAT have been the effects of the depression upon out-patient and clinic work? Are clinics able to maintain standards of service in the face of a constantly increasing attendance and a frequently decreasing income? The opportunity to discuss these and other questions relating to out-patient management brought together a group of twenty-two persons for a late afternoon and dinner conference during the meeting of the American Hospital Association at Toronto early in the fall.

Twelve institutions, the division of public health nursing of the Department of Health of Toronto and the Julius Rosenwald Fund, Chicago, were represented. Three of the institutions were unattached clinics connected with medical schools: the Cornell Clinic, New York City; the Syracuse Dispensary, Syracuse, N. Y., and the Washington University Dispensary, St. Louis. Two were tax supported institutions affiliated with medical schools: Bellevue Hospital, New York City, and the University Hospital, Minneapolis. Two were privately supported hospitals connected with medical schools: Stanford University Hospitals, San Francisco, and the University Hospitals of Cleveland. One was the out-patient department of a community hospital affiliated with a medical school: the Vanderbilt Clinic of the Columbia-Presbyterian Medical Center, New York City. Three were community hospitals and one a community clinic: Butterworth Hospital, Grand Rapids, Mich.; Harper Hospital, Detroit; the Hospital for Joint Diseases, New York City, and the North End Clinic, Detroit. A representative of the New York-Cornell Medical Center was also present.

Clinics Shared Three Main Problems

Dr. Michael M. Davis, director for medical services, the Rosenwald Fund, opened the meeting by propounding the questions given at the beginning of this article. All those present were asked to answer them from the point of view of the institutions with which they were connected. Their answers stressed these three points: the great increase in the number of persons desiring admittance; the tremendous decrease in fees paid; the decrease in funds from other sources. All were concerned with three main problems: controlling the intake; maintaining standards of service; limiting expenditures so as not to increase deficits.

The Situation at Cornell Clinic

Almost all the clinics and out-patient departments represented had had a large increase in the number of persons desiring admission. The Cornell Clinic was the only one that did not report this condition. Miss Mooney, who is in charge of admitting, stated that the slight falling off of attendance during the summer had been due to the fact that appointments had been cancelled because of the publicity given Cornell as a place where persons who had had infantile paralysis should go as donors. She said, however, that the type of clientele at Cornell had completely changed as a result of the depression. The patients now include those who formerly could well have afforded to pay private specialists. They had had their salaries greatly reduced or they no longer had salaries and were obliged to seek care at Cornell, though they did so reluctantly. The patients from a lower economic scale, who formerly made up the bulk of the attendance at Cornell, have now almost completely dropped out.

Dr. John Vincent Lawrence, Washington University Dispensary, said that the number of patients attending the clinic had increased by 20,000. A large percentage of these had to be given free care. During 1930 and 1931 the demand for free service has been greater. The university has extended its quota of free and part-pay patients and the demand for services by welfare organizations has been more than doubled. The agencies using the clinics for services are community fund agencies and they pay for their clients on the basis of services rendered each client. Thus no blanket sum is received from community relief sources, but service is rendered and paid by the community in direct and accurate proportion to the amount used.

Dr. Ralph B. Seem, director, Stanford University Hospitals, stated that their out-patient department has had the busiest year in its history. Many more persons are applying for free treatment than was the case a year ago. An increasing number of patients who need operative care have to be referred to the San Francisco Hospital, the city institution, because they are unable to pay.

How Other Clinics Have Suffered

North End Clinic, according to Eleanor Jones Ford, the director, had a 30 per cent increase in clientele in 1930. The increase during the first nine months of 1931 was about 20 per cent. On the other hand, the per visit income from patients is only about two-fifths of what it was two years ago. The total income from patients dropped 23 per cent in September, 1931, and 11 per cent in 1930.

Harper Hospital, Detroit, has also suffered. Two years ago 80 per cent of the patients paid an admission fee at least; in the fall of 1931 less than 20 per cent were making any payments. In July, 1931, there were 7,000 clinic visits made by 2,400 individuals. Of these, 5,000 were free; for only 2,000 was a fee of fifty cents paid. The city department of public welfare which formerly took care of a daily average of 100 free hospital patients, has almost completely cut off its support and now assumes responsibility for only ten or twelve hospital beds daily. Surgical appliances, glasses, special drugs and supplementary diets are no longer supplied by the city.

Gertrude Smith, Butterworth Hospital, said that their clinic attendance had increased so much in 1930 that they had to limit their intake in 1931.

Louise Bentley, director of the Syracuse Free Dispensary, reported that in comparison with figures for 1930, there were between 500 and 600 additional visits in the two months preceding her report.

Dr. Frederick MacCurdy of the Vanderbilt Clinic reported a definite increase in the demand for admission for chronic care. He said that "because of the appointment system and other administrative factors, the clinic has been working to capacity. Limitation of intake is necessitated by the administrative policies and the quality of work demanded. Because of this it has been necessary to reject from 50 to 300 applicants daily, referring them to other organizations. . . . Among this list of new applicants two groups have definitely increased the applicant load, (1) those who through economic reverses, mental worry and need of social relief apply for medical care . . . , (2) those who through an attempt to conserve their earnings and to take advantage of the unemployment situation deliberately misrepresent this in an effort to gain entry to the clinic."

The representatives from the University Hospitals, Cleveland, and from Bellevue Hospital said that the increase in the number of those requesting admittance had been caused by the fact that both clinics had just moved into a new building, as well as by the depression. Dr. Edwin L. Harmon, Lakeside Hospital, University Hospitals, Cleveland, stated that in 1930 the daily average was about 410; during 1931 it was 525, while the income from patients dropped 30 per cent. Constance Webb, director of social service, University Hospitals, Cleveland, has found a great increase in the number of patients known to relief and other social agencies. She is finding that other hospitals are tending to send patients to Lakeside in increasing numbers.

At Bellevue Hospital, according to Margaret Lyman of the New York Tuberculosis and Health Association, who has been closely associated with the reorganization of the out-patient service there, the intake has increased enormously. This increase is partly due to the fact that the out-patient department moved this year into a new building and partly because private institutions are sending as many free patients as possible to city institutions, particularly to Bellevue. Patients are referred especially to the prenatal and venereal disease clinics. As a result, the problem of limiting intake in city institutions is tremendous.

Limiting Clinic Intake at Harper

A question was asked regarding the measures being taken to limit intake and to effect economies in the face of increasing attendance and decreasing income. Alice H. Walker, Harper Hospital, replied that through their appointment system they were able to limit their intake on the basis of the medical need. A senior resident physician interviews all new patients. Beatrice K. Kaiser, clinic executive at the hospital, determines the eligibility of the patients from the economic point of view. In general the following classes of patients are not admitted: (1) chronic patients who cannot be benefited by treatment; (2) patients who are attending other clinics or who are within walking distance of another clinic; (3) patients who have a family physician, unless referred by him by letter or telephone; (4) patients with venereal disease, for whom clinics are conducted by the department of health.

The aim of the out-patient department at present is to serve the acutely ill and the chronic patients, such as those with diabetes and heart disease, whose conditions are amenable to treat-

ment. Each new patient receives a thorough physical examination preliminary to further treatment. The admission clinic is conducted by senior resident physicians whose salaries are paid from the budget of the out-patient department.

Certain measures of economy have been instituted. (1) The social service and clerical staffs have been reduced. (2) Three clinics, endocrine, psychiatric and pediatric, have been closed. (3) Free chronic patients no longer receive physiotherapy. (4) Free dental work is limited to extractions. Fillings and dentures are provided at cost. (5) The average cost of prescriptions has been reduced from 70 cents to 30 cents each. This was made possible by restricting prescriptions in general to those listed in the United States Pharmacopeia and by prohibiting in general the use of proprietary preparations.

What Is Being Done at Butterworth

At Butterworth Hospital clinic intake has been limited in two ways: (1) All patients who have received some form of relief from the city are sent to the city physicians' office; the city physicians will accept only persons receiving relief or shelter through the city department. (2) The care of venereal disease patients is delegated to the city. Grand Rapids has never before had a city venereal disease clinic but is now running one at the city hall. The amount of the city's medical work has increased fourfold as a result of the depression.

S. G. Davidson, superintendent, Butterworth Hospital, said that the financial situation had had no serious effect on income and deficit in 1931, because of salary reductions and other economies put into effect, but that those in charge are wondering what is to happen in 1932. Butterworth gave up its venereal disease clinic with deep regret.

Mrs. Ford, director of the North End Clinic, stated that in 1930 the clinic had carried the 30 per cent increase in attendance with only about 7 per cent increase in total expenditures. She feels that the situation will be increasingly difficult in the future because of the forced abandonment by the Detroit Department of Public Welfare of its previous generous policy in giving medical relief and hospital care to relief families.

The North End Clinic has met its problems in various ways. (1) Doctors have attempted to weed out all needless visits by studying their own work to find out whether they have had patients coming unnecessarily or too often. (2) They have discontinued their psychiatric work and have limited the nutrition and dietetic service. (3) They have limited the number of x-rays to the most important ones. (4) No free care is given in orthodontia. (5) No free dental anesthesia is given. (6) The clinic is definitely charging everybody for lost cards, except in emergencies, and whenever possible for medicines. This plan has resulted in a reduction of free patients. (7) Certain patients have been turned back to the city.

At Bellevue Hospital, according to Miss Lyman, the problem of limiting intake so as to maintain standards is particularly difficult because Bellevue is a municipal institution and patients cannot be turned away arbitrarily. The clinic has proceeded in two ways. (1) The out-patient committee has made a rule that there must be a minimum of sixteen physicians in attendance in the medical clinic from one to three in the afternoon, with two divisions operating. On busy days physicians often remain for from half an hour to an hour overtime in order to give service to new applicants. (2) Figures were collected showing the percentage of increase of visits and patients over the previous year and what the doctors had done to improve the clinics and to increase the number of hours they spend in this work. These figures were discussed by the medical board with the department of hospitals. As a result an order was put through assigning certain districts to Bellevue, except in special types of cases. Even this, however, has not slowed up the intake.

In the attempt to control intake, each main division of the out-patient department has been requested to state the number of new patients it can handle adequately during a clinic session. For example, the medical board has agreed to accept 100 new patients daily in the general medical clinics. A tally of new patients is made at the main registration desk. When the day's limit is reached, the additional applicants are given numbers and are asked to be seated in the main waiting room. At two o'clock two visiting physicians from the medical service hold an emergency clinic for these applicants, picking out the urgent cases to be sent to the hospital or to the regular medical clinic and giving future appointments to those that are not urgent cases. Appointments in the medical clinics are being made a month in advance; in the ear, nose and throat clinic, six weeks in advance.

Income Dropped 30 Per Cent

At Lakeside Hospital, according to Doctor Harmon, the clinic is confronted with a real problem, because of the greatly increased attendance and the great decrease in income. Income from patients has dropped 30 per cent. The clinic is considering changing to a pay clinic or limiting the intake of patients per day. Mrs. Webb emphasized the fact

that only lately have doctors realized the drawbacks of big clinics and agreed that they must limit numbers in order to do better work. Lakeside is developing a centralized admission service manned by trained medical social workers responsible to the social service department. This department would be concerned with: (1) determination of eligibility; (2) fee adjustments in the out-patient department, and (3) determination of rates in the hospital.

Clinic Economies at Minneapolis

Ray Amberg, director of the out-patient department of the University Hospital, Minneapolis, a state institution, commented on the problems presented by patients who come there from the rural part of the county and who are unable to pay. City patients cause no trouble, for they can be sent to the city hospitals in Minneapolis and St. Paul unless they can pay their way. Those who have applied to the state relief board of review are encouraged to come.

Any rural patient's admission fee of twenty-five cents can be remitted, but some one must pay for their x-rays and drugs. Sometimes even the doctor gives them money for this. By this means, the out-patient department has cut down the amount of free drugs and x-rays to about one-half.

A committee representing four out-patient departments in Minneapolis and St. Paul, the Wilder Dispensary, the Ancker Hospital, the Charles T. Miller Hospital and the Minneapolis General Hospital, met to determine what patients were transient and who was responsible for them. They made a plan whereby the different institutions would assume responsibility for different groups. This method has saved much trouble for both patients and hospitals.

The number of patients being seen daily at the out-patient department of the Minneapolis General Hospital is about 400. Mr. Amberg thinks that the clinic is seeing not less but more real illness. Twenty-three per cent of the cases are pathologic and about 12 per cent are hospital cases. These are high percentages.

There was considerable discussion of the methods used in controlling intake and maintaining standards. Miss Walker of Harper Hospital said that as a result of the measures described, which were part of the general reorganization of the entire out-patient department from the standpoint of physical arrangement and of readjustment and closer correlation of clinics, it had been possible to care for the increased number of patients with a reduced administrative staff and on a budget that had shrunk enormously from the original calculation. She feels that out of this difficult year has come a forced reorganization which has been wholesome.

Mr. Davidson said that the trend seemed to be toward limiting the number of patients in privately supported hospitals and sending them to city hospitals. In commenting on this, Doctor Davis asked whether, if this were the case, the privately supported hospitals should center their efforts on getting more funds for free work or whether they should let the government assume the responsibility of caring for indigent patients. Doctor Seem said that the community chest in San Francisco had decided that it would not increase its annual allowance to hospitals for free care as it feels that this is the responsibility of the city. It will, however, subsidize hospitals for part-pay patients.

The problems presented all seemed to center around control of intake. From an administrative standpoint, according to Doctor Davis, the effort to keep up standards is an effort to control intake through (a) better medical selection; (b) better social selection, and (c) better control of admitting. Better medical selection in a number of these clinics has been achieved through a sorting or admission clinic, social selection through having some one work with the admitting doctor to question the patient from an economic point of view after he has been selected medically, while better control of admitting has been achieved through use of an appointment system.

Doctor Davis emphasized the fact that these institutions have not allowed the pressure of numbers to deteriorate their service. In the face of a great increase in the number of applicants for admission and of stringently reduced incomes, they have in nearly two years successfully maintained their standards.

A New Bed Cart for Use With Extension Beds

Since it is not possible to bring a regular bed cart up to a bed with an extension, Prof. E. Schwarz, Rostock, Germany, has constructed a bed cart that may be brought to such a bedside, while the regular bed cart may remain at the other end of the bed, according to an article appearing in *Zeitschrift für das Gesamte Krankenhauswesen.* This bed cart is on ball bearing wheels and the raising arrangement is governed by a shaft with a hand lever in the center of the cart. The bed wagon may also be easily rolled under the bed with a lying extension, and the pressure of a lever is sufficient to raise the bed.

Editorials

Stemming the Tide

OF GREAT encouragement to hospital boards and superintendents everywhere is the cheering news that the majority of community drives for funds to alleviate the suffering of the unemployed and to support the local charitable institutions during the coming year have more than met their quotas. Perhaps no less hopeful to the hospital is the fact that this institution has as a rule been promised a generous share of these funds for maintenance. The belief that the care of the sick unemployed represents an integral part of the whole problem of meeting the needs of those without work was echoed and re-echoed by those hospital administrators participating in the recent symposium on this subject in THE MODERN HOSPITAL.

With the adoption of a policy of reasonable retrenchment and with the assistance of additional funds obtained from emergency drives for the relief of the unemployed, the average well managed hospital should be able to stem the tide of financial depression. A firm hand and a cool head are requisites for the successful hospital administrator in these troublous times.

Look to Your Staff

A GULLIBLE public still is to be convinced that the legal right to append a professional degree to an individual's name does not always guarantee more than a minimum amount of scientific skill and too often less of conscientiousness, ethics and common sense. The doctor of medicine who is able to recognize a lobar pneumonitis may be absolutely dangerous in diagnosing and treating a serious complication of pregnancy.

Staff physicians frequently lay claim to an all around proficiency which they fall far short of meriting. The hospital will do well to survey its staff records occasionally; to review the signs of professional development of its younger members and to inform itself as to the degree of scientific slowing up of its senior physicians. When an applicant who is not a graduate of an accredited school applies, he should be required to demonstrate his desirability as a staff member by years of apprenticeship. Even then only in rare instances should such a physician be granted intramural privileges.

The personal attributes of the staff member often are so offensive that great scientific skill is required to offset these defects. The possessor of an exaggerated ego, the loud speaker, the whisperer of ill founded rumors, the trouble maker, the antagonist of any innovation, all are types too often seen in staff assemblages and not frequently enough ejected therefrom. The earlier the staff physician of this type recognizes that it is the hospital which is conferring a favor upon him by allowing him to practice therein and not the reverse, the easier he will be to handle. Fortunately such physicians are in the minority. The scientific scholar is peculiarly inclined to a modesty often in direct proportion to his professional attainments.

Questionnaires

THE perennial questionnaire that seeks the desk of the hospital administrator as the moth seeks the light, and often with the same disastrous results, has come to be considered as one of our minor time consuming annoyances.

Someone, somewhere, is perplexed and, among other ways, seeks a solution of his problem by ascertaining the method used and the results obtained by other administrators in other institutions. That these institutions cannot supply information that is wholly comparable and that numerous modifying factors enter into his study do not often seem to trouble the inquirer or to stay his pen, for when he studied logic in the classroom years ago he learned the danger of conclusions drawn from single instances and the value of conclusions drawn from a series. For the conservative administrator who is not gifted with experimental habits, there is an element of safety in the knowledge that he is seeking and applying the solution recommended by a majority vote. The difficulty lies in his inability to evaluate the replies in the light of the peculiar characteristics of individual institutions. We need not be wary of statistics if they are put together strictly in accordance with the rules of logic which govern them, but the administrator should be forewarned that these rules are as universal as they are clear, and cannot be disregarded with impunity.

Whatever the quality or quantity of questionnaires that have been circulated among hospital administrators in recent years may have been (and many of them have been most helpful), there are a number of questions which one rarely sees in them but which, in a broad social sense, have profound significance. These missing questions deal

with phases of hospital administration that do not lend themselves to mathematical presentation or interpretation, although their scientific value must be apparent from the communal (public health) standpoint. A questionnaire of this kind might be handled in the form of a survey by some interested group eager to place a true value on the work of the hospital and its administrator. Questions might be asked somewhat along the following lines:

Do you consider yourself primarily a social worker or a business manager? What percentage of your working time is spent at the desk and what percentage at the bedside or in "the field"? Have you a system for auditing clinical records in your hospital comparable to the auditing of financial records? Is your hospital governed by fixed rules and regulations and if so what is the relative frequency of exceptions to these rules? To what extent is your visiting medical staff willing to share the knowledge it gains in the diagnosis and treatment of patients' ills with its colleagues who do not enjoy the privileges and opportunities of the visiting staff? What is the relative value placed in your hospital on clinical time and clerical time? Have you any record indicating the average duration of the interest of the medical staff in the patients of your hospital? Do you transfer patients who have passed the interesting stage and, if so, how do you justify it (a) to yourselves and (b) to the community? Do you place a premium on originality in your medical staff and, if so, what form does this take? What are the organized forms of cooperation between the administration and (a) the medical staff (b) the special departments of the hospital such as social service, dietetics, nursing, the record room and special diagnosis or therapy? Have you a record of the younger men who were graduated from the house staff?

Are you as much aware of your failure to meet certain community needs as you are of your successful meeting of other community needs? Do you keep a record indicating the rejection of applicants for admission to your hospital and the reasons therefor? Do you keep records of accidents to patients and to what extent are these accidents investigated and made the subject for disciplinary control? Does your institution cooperate with other hospitals in the diagnosis of patients' ills or their treatment and, if so, what active forms does this cooperation take?

What percentage of your patients leave the hospital against the advice of the staff? What are your methods for dealing with this problem? To what extent does the financial factor dominate the care of a patient in your hospital? Have you any rule limiting or excluding patients as the result of an operating deficit or a threatened decrease of future income? Do you distinguish between a moral obligation and a legal obligation? Does your hospital consider itself responsible for the care of a patient throughout his illness and, if so, are there any limitations to this responsibility?

Questions asked along these lines and in this spirit have the merit of consistency and depth and are not subject to the variations imposed by the peculiarities of individual institutions, as are the questions asked in the ordinary shower of questionnaires circulated among our hospitals. The tabulation of the replies should be stimulating as well as interesting to the hospital world. In order to provide the administrator with the necessary time to deal with a questionnaire like this it is suggested that he be relieved for the moment of answering questions about state medicine, methods of financial retrenchment in panic times and the ratio of nurses and other personnel to patients, for these questions will be answered automatically when satisfactory replies are received to questions along lines similar to those already briefly referred to.

Contributions That Defeat Their Own Object

HOSPITALS that find it difficult to keep their heads above water sometimes resort to ways of obtaining funds that are economically unsound and in the long run add to rather than subtract from the institution's burden.

One of these questionable ways of doing business is brought out in the following excerpt from a letter received by the editor of THE MODERN HOSPITAL from an indignant manufacturer:

"In connection with the danger hospitals are in in getting away from the quality standard and on to the price standard in buying of merchandise, it seems to me that there is a condition prevalent at the present time that is of vastly greater importance. This morning's mail brought exactly six requests from hospitals whose accounts are overdue, asking that we give them discounts varying from no stated amount up to 25 per cent on their accounts, in return for making immediate payment.

"In the case of a commercial concern such a request would constitute bankruptcy, but some hospitals seem to feel that this is an entirely proper and fair request to make. As stated before, we had six requests to-day—we've had numerous others within the last sixty days, one hospital, incidentally, having the effrontery to ask us to settle on the basis of 25 cents on the dollar.

"I think we have a right to expect a better standard of common decency than this from the hospital."

Are hospitals so foolish as to think that in exacting large discounts from manufacturers they are really getting something for nothing? A little reflection convinces us that if firms as a matter of expediency are obliged to accede to such unfair demands they will eventually have no recourse but to recover by increasing the price of their goods to all customers, including of course the institutions that demand the discounts.

The continuance of such a practice simply postpones the day of sound business administration among hospitals and encourages unscrupulous practices at the expense of honest merchants.

An Interesting Experiment?

NO MORE troublesome problem presents itself to the superintendent of the hospital than the maintenance of cleanliness throughout the institutional plant. Usually the janitorial personnel is only meagerly paid and renders a service that more or less accurately coincides in effectiveness with the magnitude of the salaries paid. When the average intelligence and training of the members of this group are considered, the fact that hospitals are as a rule maintained in such a sanitary state is indeed remarkable.

An Eastern institution has recently adopted the interesting policy of contracting with a local concern for the cleaning of the entire hospital. A skilled personnel daily scrubs, sweeps and dusts not only all wards and private rooms but also the quarters occupied by nurses, doctors and members of the minor personnel. Of greater interest to executives will be the fact that the expense of this policy is expected to fall far short of equaling that of hiring and housing the usual janitorial force. If the managers of office buildings find such a plan financially advantageous, under favorable circumstances the hospital might also expect to profit by its adoption. Surely many of the burdens of the executive would be lightened if the housing and feeding of this group could be dispensed with.

The Politician as a Hospital Executive

HOSPITALS that receive appropriations from governmental agencies are confronted with embarrassing situations unknown to the purely private institution. Indeed, while state, county or municipal participation in meeting the expense of caring for the community's sick is often welcome, such grants are not always made in fee simple. Attached thereto is frequently a cord which threatens their withdrawal at any moment. Such a threat is very real and the recompense expected by the appropriating individual or group for merely performing a public duty is no more or less than the recognition of the right to interfere in the conduct of the hospital.

Frequently this meddling takes the form of the agency's demanding the right to place in free beds some of the political satellites of the politician in power. If free beds are not considered sufficient reward for properly expending the public's money, then positions on the hospital's staff may be the return demanded. The power "to make" superintendents, staff physicians, engineers or even head nurses is the proud boast of the more or less petty politician. If favors are withheld then retribution is likely to be meted out to the hospital at the next legislative session. As a result, intrigue, inefficiency and plotting creep into the hospital organization.

When offensive politics enter the front door, high morale and the scientific safety of the patient leave by whatever exit they may escape. A high grade, well conducted hospital with fair and ample governmental aid will more certainly elevate the popularity of the selfish politician than will a dozen ineffective, carelessly managed institutions which routinely submit to his unreasonable requests. The politician as a hospital manager usually represents the acme of bungling ineffectiveness.

Tempting Fickle Appetites

HOSPITAL food often suffers by comparison with food to which the patient is accustomed. Too frequently it lacks variety and imagination in its planning. Cooking for a patient whose gastronomic apparatus is disarranged by sickness is no simple task, since, because his appetite is fickle, his fault finding propensities are easily aroused. Variety is not only the spice of the life of the well but doubly so does it stir the sluggish palate of the ill.

February, the month of birthday holidays, offers excellent opportunities to the alert dietitian to tempt the patient's jaded appetite. Cherry trees and log cabins make excellent motifs for desserts and tray decorations. Special menus for February 12 and 22 make possible a welcome interval in the apparently never ending round of menus of similar appearance. A surprise a day in the hospital dietary would serve to keep the ennui of private patients away.

Practical Administrative Problems:

When Is Oxygen Therapy Indicated and How Is It Best Given?*

By WILLIAM THALHIMER, M.D.
Director of Laboratories, Michael Reese Hospital, Chicago

IT IS universally realized that the oxygen taken in through the lungs by the mechanism of breathing is necessary for the life of each individual body cell. It is not so generally known that even a slightly diminished supply of oxygen to these cells may cause serious damage.

Oxygen is supplied to the tissue cells by the blood and enters the blood as it flows through the capillaries in the lungs. There will be a subnormal amount of oxygen in the blood if the supply of oxygen is diminished, if the utilization of oxygen is too great or if the circulatory and respiratory mechanisms are interfered with by disease. When there is a diminished amount of oxygen in the blood (anoxemia), this causes a decreased oxygen supply to the cells, which gives rise to oxygen want.

Pioneering in a New Field

A normal individual has several physiological mechanisms which automatically maintain a normal oxygen content in blood and tissues, even though there is a diminished oxygen supply or an increased demand for oxygen. Excessive conditions may overtax these compensating mechanisms and cause anoxemia to develop even in a normal individual. Certain diseases, moreover, interfere with these compensating mechanisms to such an extent that anoxemia and oxygen want are produced by relatively slight causes which would not affect a normal individual at all, and anoxemia may be made inevitable in these diseases by progressive insufficiency of the compensating mechanisms.

In recent years the importance of a study of the respiration, including also the circulation of the blood, has been realized and a great extension in our knowledge has resulted. On the basis of this newer knowledge, the importance of respiratory phases of various diseases has been better understood and the investigations of certain pioneers have shown the way to the rational therapy to be used in these conditions.

The supply of oxygen to the body cells, and the regulation of this supply can be outlined simply as follows. Air, which contains about 20 per cent of oxygen and 80 per cent of nitrogen, is drawn into the lungs with each inspiration, and the amount of oxygen needed is taken up by the hemoglobin of the blood while circulating through the capillaries in the alveolar walls. The oxygen, which diffuses through the living membrane of the alveolar walls into the blood, is used in various metabolic processes by the individual tissue cells, diffusing into these cells, through the membrane forming the capillary walls. Much of this oxygen enters into the various oxidative processes of the body and produces a number of end products, one of the most important being carbon dioxide. The carbon dioxide diffuses back into the blood from the cells and again diffuses out into the alveolar air through the alveolar walls. The alveolar air contains from 5 to 6 per cent carbon dioxide and this dilutes the air within the alveoli so that only about 16 to 18 per cent of oxygen is present there. The air in the lung alveoli is called "alveolar air" and under normal conditions the oxygen and carbon dioxide content of alveolar air is practically in equilibrium with the amount of these gases in the blood.

The Process of Normal Respiration

In order that the physiological exchange of these gases can continue, the coordination of a number of mechanisms is necessary and certain physical conditions must be maintained. There must be sufficient oxygen in the inspired air. Respiration must proceed at a sufficient frequency and depth so as to introduce enough oxygen into the alveoli. An adequate number of alveoli must be open so that oxygen can reach the pulmonary capillaries. There must be enough hemoglobin present in the blood to carry oxygen, and this hemoglobin must have normal oxygen carrying power. The alveolar walls must be sufficiently

*This résumé was prepared at the request of the editors of this journal and is an attempt to present the physiological aspects of oxygen want, the indications for the use of oxygen in treating certain diseases, modern methods of administering oxygen and the types of favorable response to oxygen therapy.

permeable to permit diffusion of the essential gases through them in both directions.

There must be an adequate circulation of blood not only through the lungs, but through the rest of the body, so that enough hemoglobin will be kept in circulation everywhere to take up the needed amount of oxygen through the pulmonary capillaries and to distribute the oxygen to the body cells through the tissue capillaries. The circulation is of great importance also for the diffusion of carbon dioxide into the blood from the tissue capillaries, and into the alveolar air from the pulmonary capillaries. Stagnation in the pulmonary capillaries causes decreased oxygen absorption, whereas stagnation in the tissue capillaries allows the cells to deplete the blood of oxygen.

Hemoglobin—Its Nature and Function

Hemoglobin is present in the red cells of the blood and has the chemical characteristic of combining easily and loosely with oxygen. This allows it to take up oxygen from the air and supply it to the tissues where it is needed. When hemoglobin has given up its oxygen to the body cells, it is in the "reduced" condition and is dark in color. This is mainly responsible for the dark color of venous blood and for the dark color of arterial blood in most types of anoxemia. Upon combining with oxygen in the alveolar capillaries, reduced hemoglobin changes into oxyhemoglobin, which is bright red in color, and gives arterial blood its usual appearance.

Some other gases can also combine with hemoglobin. Carbon monoxide, for example, forms carbon monoxide hemoglobin, and has a stronger affinity for hemoglobin than has oxygen. Each molecule of hemoglobin which is combined with carbon monoxide is unable to carry oxygen until the carbon monoxide hemoglobin combination has been broken down, thus leaving the hemoglobin again free to combine with oxygen. Carbon monoxide itself is only slightly toxic to the tissues, if at all, but produces its damaging, and at times, lethal effect, by interfering with oxygen transportation, thereby producing anoxemia.

Carbon dioxide is present in the blood either in simple solution or in loose combination with various alkaline substances. Carbon dioxide acts as a weak acid but the buffering effect of many substances in the blood prevents carbon dioxide under normal conditions from changing the hydrogen ion concentration of the blood.

Since oxygen transport is dependent upon the diffusion of this gas, through living membranes, knowledge of such diffusion of gases was required to understand this phase of the physiology of the process. It has been found that gases diffuse through membranes in proportion to the partial pressure of each gas. The partial pressure of a gas is dependent not only on the percentage of gas present, but also upon the barometric pressure of the mixture as a whole. Thus, if at atmospheric pressure the percentage of oxygen in the air is reduced by half (from 20 per cent to 10 per cent), only one-half as much oxygen will diffuse from the inspired air into the blood as will diffuse from normal atmospheric air. On the other hand, if the percentage of oxygen is doubled (or raised from 20 per cent to 40 per cent), it will diffuse twice as rapidly. If an individual is placed in a chamber which contains normal atmospheric air (20 per cent oxygen), but with the barometric pressure reduced by one-half, then the diffusion of oxygen will be reduced by one-half. Similarly, if the pressure within the chamber is raised to twice that of the atmosphere, the oxygen will diffuse through the alveolar membranes twice as readily as normally. These facts form the basis of oxygen therapy in anoxemia. By actual analysis of the blood both of experimental animals and of patients suffering from anoxemia, it has been found that the breathing of atmospheres containing high partial pressures of oxygen increases the oxygen content of the blood.[1]

It is simpler, from a practical point of view, to increase the percentage of oxygen in the atmosphere breathed by the patient than to construct a chamber in which the pressure can be raised above atmospheric, and this review will deal only with the former method.

Why Anoxemia Must Be Prevented

The importance of preventing anoxemia is stressed by Haldane in his monumental book on "Respiration." He states, in substance, that mild degrees of anoxemia have serious effects, and moderate or severe degrees may be fatal. He feels that his entire work will be worth while if he can impress upon clinicians the seriousness of anoxemia. If the latter persists, it may produce such severe permanent damage to the cells of the body, especially to those of the central nervous system, that these cells will be unable to recover, even though the anoxemia is relieved subsequently.

The physiological responses which compensate for oxygen want are the same whether the oxygen want is produced by a sudden ascent in an airplane to a rarified atmosphere, by the increased demands for oxygen caused by violent exercise or by certain diseases.

There is an increase in heart action, especially

[1] A normal individual is not affected by breathing an increased concentration of oxygen. His blood is already saturated with oxygen and cannot be supersaturated.

in heart rate, in an attempt to increase the blood flow, and a simultaneous increase in respiration rate to enhance pulmonary ventilation. The reserve powers of the circulatory and respiratory organs in a normal individual can cope with a considerably increased call upon them, but if the demand is too great anoxemia finally results. The increased activity of the heart and respiratory organs occurs at the expense of a considerable expenditure of energy, especially by the heart muscle. The faster the heart beats the less time it has to rest between contractions and the less chance it has to recover for the next contraction. The greater the demands, the less reserve remains in the heart, until it is driven to the stage of exhaustion, whereupon death results.

What Happens in Pneumonia

A febrile disease causes an increase in heart rate and in frequency of respiration. Added to this strain there is usually present a toxemia which adds another insult to the heart muscle. Under these circumstances the compensating mechanisms under discussion are weakened and if another factor enters, contributing towards a further diminution of the amounts of oxygen which can be absorbed from the lungs, the stage of anoxemia soon is reached. If on the other hand, an increased amount of oxygen is made available in the lungs by increasing the percentage of oxygen in the respired air, the greater partial pressure of the oxygen induces better diffusion into the blood and thereby relieves the anoxemia. This, in turn, decreases the demands on the heart and respiration. The slowing of the heart rate, which results, is of extreme importance in conserving and building up the reserve of this organ.

We may trace what occurs in pneumonia in relationship to the possible development of anoxemia.

With the development of an area of consolidation some of the lung can no longer aid in the necessary gas exchange necessary. This induces a great increase in the respiration rate, whereby the blood passing through the uninvolved portions of the lungs can be more thoroughly oxygenated. The heart rate increases to the same end. Thus, even in spite of the pulmonary consolidation, anoxemia is prevented for a while, but the limit is soon reached, anoxemia results, and the organs which already are working at their maximum suffer the additional handicap of an insufficient supply of oxygen.[1] They are compromised more and more so that their functional response becomes less and less with the development of increasing anoxemia. There is thereby established a vicious cycle. If this cycle can be broken at any one place, it will allow the overworked organs better to deal with the strain put upon them.

If we had an efficient method of specific treatment of pneumonia, such as a serum, it could be used to control the disease. Unfortunately, none of the serums is agreed upon as being generally efficacious. Helping the heart in its work by stimulants or other means would be of assistance, but there is no agreement upon the use of heart stimulants in the treatment of pneumonia. The only other method available, at present, is the direct relief of the anoxemia by increasing the percentage of oxygen breathed. This procedure practically always gives some benefit because, by relieving the anoxemia, a normal amount of oxygen is supplied to the tissues which results in stronger heart action and more normal physiological function of the tissues generally. In addition, fewer respirations and fewer heart beats are needed to maintain oxygen saturation of the blood.

The pneumonic patient often suffers not only from anoxemia and its results, but from extreme distress caused by rapid and difficult respiration and from extreme restlessness caused by fever and toxemia. Often this restlessness cannot be controlled by even so strong a sedative as morphine and may eventually progress into delirium. One not infrequently sees patients exhausted not only by the pneumonic disease but by the lack of sleep. Many times, soon after oxygen treatment is started, the patient not only shows a definite slowing of the respiration and heart rate, but also drops off into a quiet, restful sleep.

When Oxygen Therapy Should Begin

The usual method for recognizing anoxemia is the detection of cyanosis, which is manifested by a blue color of the mucous membranes, finger nails and at times even of the skin. With the administration of oxygen and the relief of the anoxemia, the cyanosis disappears. It must be remembered that in pneumonia, even before cyanosis appears, the heart and lungs are laboring under difficulties, and slight degrees of anoxemia can be present even without cyanosis. Consequently, from the onset of the pneumonia, the heart and respiration can be spared by administering oxygen, and one can prevent mild degrees of anoxemia which do not cause cyanosis and which can be detected only by a careful chemical examination of the blood. It is even more valuable to prevent the development of anoxemia than it is to relieve it, and because of this, treatment with oxygen should be begun as

[1]Some patients with pneumonia, especially children, may develop a severe anemia very rapidly. Thus the amount of hemoglobin available for carrying oxygen is reduced and this may contribute to anoxemia. Transfusions, with whole, unmodified blood should be used to relieve the anemia. This procedure is safe when properly performed and the blood given slowly, and is not only beneficial but at times is life-saving.

soon as the diagnosis of pneumonia has been established. Unfortunately, many patients with pneumonia are not given oxygen until the stage of cyanosis is reached.

The significance of the degree of cyanosis has been learned by a careful chemical analysis of the arterial blood in cyanotic individuals. The oxygen content of the blood has been determined in relation to the oxygen carrying power of the blood and to the degree of cyanosis present. Normally, our arterial blood is almost completely saturated with oxygen. This is shown by examining two samples of the same blood. In one sample the actual amount of oxygen present is measured in a unit quantity of blood and in the other the amount of oxygen with which the same quantity of blood is capable of combining.

How Patients React to Treatment

In pneumonia, Binger and Stadie found that when a barely detectable cyanosis is present, arterial blood shows 5 per cent oxygen unsaturation; when the cyanosis is in moderate degree, the oxygen unsaturation is about 10 per cent; when the cyanosis is marked, it is 20 per cent or more. These workers, as well as Barach and others, also learned that the administration of atmospheres containing at least 30 per cent of oxygen is necessary to relieve anoxemia appreciably and that even higher percentages of oxygen are needed to get marked relief.

Unless the patient is moribund, the anoxemia yielded in practically all instances to 50 per cent oxygen, but in a few instances 60 per cent oxygen was needed. Less than 30 per cent oxygen causes so little benefit that it is futile to use oxygen in such small amounts. In some patients with an oxygen unsaturation as great as 30 per cent to 40 per cent, after administering 50 per cent oxygen, the patient's blood oxygen content returned to almost complete saturation. On the other hand, Karsner, Barach and others have found that the breathing of higher percentages of oxygen, 80 per cent or more, is injurious to experimental animals. Consequently, the optimum concentrations of oxygen to be used are 50 per cent to 60 per cent.

In spite of the results just described and in spite of the practical results obtained in many hospitals, there still are some who question the benefit to be derived from oxygen treatment of pneumonia. Their doubts would be relieved if they were to see what happens when a patient, who is being benefited by oxygen administration is suddenly deprived of his additional oxygen, if, because of some accident, the oxygen supply is temporarily interfered with. This rarely occurs since most oxygen therapy apparatus is remarkably dependable, but nevertheless, we have all seen it happen.

The patient's cyanosis immediately reappears, he feels the tremendous need for oxygen, and becomes extremely restless and excited. If members of the patient's family happen to be present, they become even more excited. The patient frantically asks for oxygen and finally begs and pleads for it and the family does likewise. When the oxygen supply is again re-established (usually in a short time) the patient's subjective symptoms are relieved immediately. The cyanosis disappears and he becomes quiet. An accidental experience of this sort is more convincing of the value of oxygen treatment for anoxemia than any amount of statistical evidence.

It should be remembered that oxygen is not a specific remedy for pneumonia. It is, however, a specific for relieving or preventing anoxemia. It influences the course of pneumonia and other conditions, only by relieving the anoxemia and thereby preventing the damaging action of oxygen want on the body cells. This relief to the patient, especially to the heart muscle and cells of the central nervous system, not infrequently turns the scales in the direction of recovery in what, at times, seems a hopelessly fatal illness. There is no doubt in the minds of many that oxygen therapy at times prolongs life in pneumonia for as long as several days, thereby giving the patient additional time to overcome the infection. At times, even with this prolongation of life, the patient is overwhelmed by the disease and succumbs. The ideal combination, from our present point of view, would be effective, specific serum therapy in addition to the use of oxygen.

The same kind of results are obtained with oxygen in cardiac insufficiency or collapse, as in pneumonia. Therefore, these results can be discussed briefly.

Cardiac Insufficiency

In cardiac insufficiency, anoxemia is caused largely by sluggish circulation of the blood through the capillaries in the alveolar walls with consequent oxygenation of less and less hemoglobin. Besides this, the edema of the alveolar walls and the fluid extruded in greater or less amounts into the alveoli themselves make the diffusion of oxygen into the blood more difficult.

In some patients with severe cardiac decompensation, cyanosis is severe and subjective symptoms of oxygen want are present even to the stage of air hunger. Some of these patients have so little reserve that nothing can be done for them and even oxygen fails. In many others, remarkable improvement occurs in both subjective and objec-

tive symptoms within a few minutes after oxygen treatment has been started. When this occurs, the cyanosis disappears and the pulse and respiration rate slow appreciably. Again the damaged, overburdened heart muscle receives optimum amounts of oxygen and can perform its work better. We have all seen patients recover from cardiac decompensation after all other methods of treatment have failed, when the only additional variable introduced into the treatment was the administration of 50 per cent oxygen.

Examples of Relieved Cardiac Difficulties

The benefit from oxygen has been found to occur not only in the usual types of myocardial insufficiency but in some patients with acute coronary occlusion, and also in cardiac insufficiency, resulting after the subsequent cardiac infarction occurs. Recently, it has been my experience to see a seventy-six-year-old man apparently saved during his acute attack of coronary thrombosis by a week's treatment in an oxygen room. He was convalescing fairly well, when three months later he insisted on walking up a hill near his home. After this, a gradual cardiac decompensation followed in spite of complete digitalization and in three weeks he advanced to the stage of edema of the legs, enlargement and tenderness of his liver and great difficulty in breathing and sleeping.

At this time an oxygen tent was used at night and for about one hour every afternoon. He was able to get a restful nap every afternoon and to sleep practically through each night, with complete relief of his breathing difficulty. Even during the day, when out of the oxygen tent, his breathing gradually became easier and the liver enlargement disappeared. At present, the edema of the legs has almost gone. He is now, after three weeks of this use of the oxygen tent, in as good condition as he was before he walked up the hill, and is making slight additional progress each day. He undoubtedly has a large cardiac infarction and little cardiac reserve.

Barach, for the past several years, has found that oxygen benefits some patients with a long, drawn out cardiac decompensation caused by the usual types of myocardial disease. This is the type of patient who has cardiac embarrassment, with edema and general anasarca persisting for weeks and months. He has treated a number of these patients with 50 per cent oxygen after all of the other methods of therapy have failed, including digitalis and the newer diuretics. These individuals improve subjectively as soon as they are placed in 50 per cent oxygen, and in about a week their urinary output rather suddenly increases with a gradual disappearance of the anasarca. The same worker has found also that some patients with severe, frequent attacks of angina pectoris, which even come on when the patient is at rest, are relieved of these attacks by the use of 50 per cent oxygen. It usually takes several weeks to get the maximum result. Some of these patients have returned to their administrative work, which requires little physical effort, and have continued at this for a long period of time, using an oxygen tent only at night.

Boothby and his co-workers have found that placing thyrotoxic patients in 50 per cent oxygen immediately after operation prevents the development of the not infrequent postoperative pulmonary complications, including pneumonia, and for some not understood reason prevents the usual postoperative rise in temperature.

This group, as well as Wilder and others, feel that they have saved the lives of many who developed postoperative pulmonary emboli. They have also used oxygen treatment with considerable success in the early stages of postoperative pneumonia.

All of the statements already given apply equally well to infants suffering from pneumonia and also to the newborn who develops cyanosis. Julius Hess and his co-workers have used oxygen extensively in a specially designed miniature oxygen chamber with excellent results in treating infants with cyanosis, whether these infants are premature or full-term, and also some groups of infants who develop pneumonia. This investigation will be reported later by these workers.

This review would not be complete without a few words regarding the use of carbon dioxide, either alone or combined with oxygen. There can be no question but that a mixture of oxygen and from 5 to 7½ per cent of carbon dioxide is of great value in treating carbon monoxide poisoning, and this method undoubtedly has saved many lives. The stimulation to the respiratory center caused by carbon dioxide is undoubtedly a great aid in preserving the respiratory function in carbon monoxide poisoning and in ridding the hemoglobin of the carbon monoxide combined with it.

The Use of Carbon Dioxide

The use of carbon dioxide in treating pneumonia and the asphyxia of the newborn is apparently not on so sound a basis and more clinical proof is needed in this field. The theory that pneumonia occurs only in those lung areas where atelectasis has occurred, because of the plugging of a bronchus, requires more investigation and proof. It may be that this is true for newborn infants, but many question its probability in rela-

tion to the development of pneumonia in children and adults.

One thing should be borne in mind when carbon dioxide is used with oxygen in treating patients with pneumonia. These desperately sick patients have large areas of lung consolidation, a high temperature and a heart laboring at its maximum to maintain life. Carbon dioxide will increase the respiratory effort and in all probability the cardiac effort. It is questionable whether the cardiac reserve will be able to stand this additional strain and whether harm rather than benefit may not occur at least in some individuals. One instance has come to my attention where a pneumonic child was treated with 20 per cent carbon dioxide plus 80 per cent oxygen, which, it is true, is a higher percentage of carbon dioxide than is recommended or would be used by most physicians. The patient was progressing fairly well before this treatment was started and died in a few minutes after it was begun.

Methods for Administering Oxygen

Having reviewed the indications for oxygen therapy and the results that can be obtained with it, it is now important to describe the practical methods for administering oxygen.

The general requirements will be given first.

It is important to administer continuously at least 50 per cent oxygen. Once oxygen treatment has been started, it should not be interrupted unless the physician finds it necessary to stop oxygen administration for a minute or two for some important reason (such as taking an x-ray of the chest). Oxygen treatment should never be interrupted for giving medicines or for feeding and washing the patient. Patients have been known to die suddenly when prematurely removed from an atmosphere containing a high oxygen content. Oxygen treatment should be used continuously for at least twenty-four hours after the condition of the patient indicates that further use of oxygen is unnecessary. Thus, in pneumonia, at least twenty-four hours should elapse after the temperature has reached normal and remained normal before the oxygen is removed.

When it is decided to try to discontinue the use of oxygen, the oxygen should not be removed suddenly, but the percentage of oxygen should be reduced gradually by about 5 per cent an hour. It is best to start this reduction during the daytime, so that the patient can be carefully observed during the regular working day, and if it is found that the patient's condition becomes worse while the oxygen percentage is being reduced this can be again raised to 50 per cent immediately. Several days should elapse before the next attempt is made to remove the oxygen. Barach reported a case of a patient with heart disease, who had gone through an attack of pneumonia and had received oxygen therapy. In this instance upon twelve attempts to remove the patient from the oxygen atmosphere, he became cyanosed each time. On the next attempt, it was possible to discontinue the oxygen.

From 50 per cent to 60 per cent of oxygen should be used always. This eliminates administration by the old-fashioned funnel method. From 30 per cent to 35 per cent oxygen will give some benefit in some cases but it should be used only when it is not possible to administer the full 50 per cent.

Carbon dioxide must be removed from the atmosphere the patient is breathing. Since carbon dioxide diffuses more readily than oxygen through many materials, it has been found unnecessary to use special means for removing the carbon dioxide from oxygen tents. At times, however, it is necessary to use soda lime for this purpose.

The atmosphere should be kept cool and relatively dry. The control of these two factors is the most difficult problem with most of the present day portable types of oxygen therapy apparatus. The temperature of the air should be in the neighborhood of 70° F. This coolness of the atmosphere is grateful to the patient and has a stimulating subjective effect. It is not uncommon to find in some types of apparatus that the temperature rises to 85 or 90° F., and the relative humidity to 70 or 80 per cent. A good combination is about 70°., with 40 per cent relative humidity. Even less humidity is advisable in many instances.

Dryness of Air Is Important

The dryness of the air is important so that the patient will evaporate more moisture from the lungs. This maximum evaporation from the lungs accomplishes two results. It tends to relieve the moisture of the lungs, which is important, as most patients who receive oxygen treatment have so-called "wet lungs," whether from pneumonia or from cardiac decompensation. Furthermore, the evaporation of the moisture absorbs heat which must come from the body of the patient. If the patient is febrile, this loss of heat will help to reduce the patient's temperature, which may be the explanation of the fall in temperature which Boothby found in the postoperative treatment with oxygen of patients after thyroid operations. If the patient has cardiac failure and no temperature, the need for replacing the used up heat in evaporating moisture will stimulate the metabolic processes of the patient.

All of the well recognized oxygen tents can be

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relied on to supply 50 per cent oxygen, but unfortunately some of them will not control temperature and humidity properly, especially on warm summer days, and some of them not even when the room temperature is between 70 and 75° F.

Since increased concentrations of oxygen support combustion more readily than the oxygen content of air, the occurrence of sparks should be prevented and open flames and easily combustible materials, such as alcohol, ether and gasoline, should be kept away from the oxygen therapy apparatus. X-ray photographs should not be taken in an oxygen room and even an oxygen tent should be removed momentarily during the short time necessary for taking an x-ray. It should be remembered that anything which starts to burn will burn rapidly in an atmosphere high in oxygen.

Relative Merits of the Various Methods

There are several methods of administering oxygen. These may be described as follows:

Funnel method: This method is futile, because it gives too low a concentration of oxygen.

Mask method: The first modern work with the therapeutic administration of oxygen was done during the World War with masks. Considerable success was achieved in spite of the difficulty of the method, the mask being unwieldy and objectionable to the patients. It can be seen how impossible it is to use a mask with a coughing, expectorating pneumonia patient. Furthermore, oxygen should be administered continuously and this is impossible with a mask.

Nasal Catheter method: The nasal catheter can be used in two ways. A rubber catheter can be introduced along the floor of one nostril until it touches the posterior pharyngeal wall and then withdrawn about a quarter of an inch. The catheter is then fastened to the face with adhesive plaster. Oxygen is given through the catheter with a proper reducing valve at the rate of from 2 to 4 liters per minute, which is about as much as the patient and his mucous membranes will stand. Larger amounts of oxygen dry out the mucous membranes and cause pain and too much noise. With this method, and these amounts of oxygen, the patient will breathe from 30 to 35 per cent oxygen, as determined by Barach. Recently, Waters and Wineland, introduced the catheter still further, so that it hangs down into the pharynx, the tip being at about the level of the tip of the uvula. With the catheter in this situation, the oxygen flow is nearer to the glottis, and the patient breathes from 45 to 50 per cent oxygen. If the catheter is too close to the glottis, the patient will swallow oxygen. This can be easily determined and the catheter withdrawn a short distance. The authors state that they can deliver from 5 to 6 liters of oxygen a minute under these circumstances. However, some patients find it irritating and painful. The method is simple and requires little apparatus, the cost of original equipment being very small. Although it is not the method of choice, it has been used extensively by Waters and has given good results. It certainly should be used if oxygen tents and rooms are not available and may prove quite useful.

Oxygen Rooms: Oxygen rooms were the next method developed, but unfortunately there are not many of them in this country even to-day. They are definitely the best method for administering oxygen. The oxygen percentage can easily be controlled and raised to whatever is necessary. The temperature and humidity of the air can be completely controlled. The patient can be given complete nursing and medical care, which is important. The patient does not have a sense of confinement, such as in a tent. Members of the patient's family can come into the room whenever they wish, and the patient can have the satisfaction of having his family with him. The family also will have this satisfaction and will not feel separated from the patient as it might if the patient were in a tent.

Oxygen rooms are of two general types. One kind has a mechanical apparatus outside of the room which circulates the atmosphere, controls the temperature and humidity and removes the carbon dioxide. This is done with fans and air ducts. The chance for leakage is greater than in the second type, described in succeeding paragraphs, and the amount of oxygen needed is therefore likewise greater. Also, some patients find the noise of the fans to be disturbing.

Another Type of Room and Its Advantages

The other type of room was devised by Barach. In this room the air conditioning is accomplished entirely inside the room by convection currents and without machinery. Brine coils behind a partition, which is open at the top and bottom, are at one end of the room and a steam radiator is at the opposite end. The brine flow can be controlled by a humidostat or can be allowed to flow constantly with hand controlled valves. The brine coils cool the room and freeze out the moisture, thus drying the atmosphere. (A few rooms have been constructed with silica-gel to remove the moisture.) It is easy to maintain the atmosphere at 25 per cent relative humidity and at from 70 to 80° F.

In order to maintain this dryness of the atmosphere, there must be overrefrigeration at one

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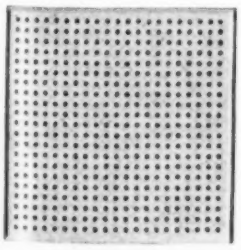

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point. This overcooling is counter balanced by an automatic thermostat which regulates the heating from the steam radiator. With an adjustable thermostat, one can set the temperature at whatever point one desires, such as 70°, and the steam is automatically turned on or off in the radiator, or it may even flow continuously, maintaining the temperature desired with a variation of not more than 1 or 2°. In the compartment in which the brine coils are located, there are trays of soda lime that will absorb the carbon dioxide from the air as it passes over or through them. A small pipe into the room allows one to remove samples of the atmosphere and with very simple apparatus to analyze them for the content of carbon dioxide and of oxygen.

The room must have a large door through which the patient is introduced, if necessary, on a bed. Once the patient is admitted, this door is not opened again until the patient leaves the room. A second, smaller door is used by the attendants for going in and out of the room. This door may lead through an air lock or it may simply have a curtain over the opening on the inside of the room. The door opens outwards and with this curtain in place, little oxygen is lost when a person goes in or out.

The amount of oxygen needed to charge the room up to 50 per cent depends on its size. A room with a floor space of 10 by 15 feet and a ceiling height of 8 feet, requires about 600 cubic feet of oxygen (or three large cylinders) for charging. Afterwards this 50 per cent of oxygen can be maintained by delivering twelve liters of oxygen per minute, requiring between 600 and 700 cubic feet of oxygen each twenty-four hours. Smaller rooms, if leak-tight, usually require less.

Quick and Noiseless Charging Is Necessary

It is important to be able to charge the oxygen rooms quickly and noiselessly. This recently has been accomplished in some rooms by introducing the oxygen through two-inch pipes and through a special muffler which eliminates the noise. In this way, over 600 cubic feet of oxygen can be introduced in five minutes, and at the end of that short time the patient is breathing 50 per cent oxygen. It is important, also, to be able to raise or lower the temperature of the oxygen room quickly. The patient is usually most comfortable at from 68 to 70° F., but it should be possible to raise the temperature within a few minutes so that the patient may be examined or a small operation performed. Again, afterwards, by adjusting the regulator, the temperature should be lowered quickly to that desired by the patient.

Oxygen Tents: Oxygen tents are extremely satisfactory as moderately priced, portable means of administering oxygen. They are a compromise, even though an excellent one, but they do not have all the advantages of the oxygen rooms.

They are made of a flexible fabric which holds oxygen well but which fortunately allows the carbon dioxide to diffuse through it. This diffusion of carbon dioxide was not recognized for some time and soda lime was used to absorb this gas. Discontinuance of its use has saved trouble and expense. The tent should be as large as possible, from 15 to 24 cubic feet capacity. It should contain several large windows of cellulose acetate. The mechanism for circulating the atmosphere should be as noiseless as possible. Some tents use a motor driven fan, others have very ingenious mechanisms that utilize the oxygen supply to circulate the atmosphere.

Why Cooling System Must Be Adequate

It should be made certain that the cooling system, which usually employs ice, is large enough to give the desired effect. This has not always been done, but the manufacturers of the tents recently have realized the importance of this more and more. Large ice containers require filling less often, some of them only twice a day. Their capacity should be 100 pounds or more of ice. By calculation, it has been found that it is necessary to melt at least ten pounds of ice an hour to obtain the cooling necessary. This is especially true when the patient is febrile and the day is warm.

No rigid rule can be given, therefore, as to the amount of circulation of atmosphere necessary, other than that it should be enough to control the temperature and humidity, even on days when the temperature is in the nineties, and the patient's temperature is 105 or 106 degrees. This factor should be determined by the manufacturer for his tent. Otherwise, if the humidity and temperature inside the tent are not controllable they will have a seriously bad effect on the patient. In fact, some patients will refuse to stay in the tent. Improvements in tents are being made constantly and there are a number on the market at present which satisfy all conditions.

Tents should hold oxygen so well that 50 per cent oxygen should be maintained by delivering five to six liters of oxygen a minute, requiring, therefore, about one-half the amount of oxygen needed for a large oxygen room.

It is important that the ice box of the tent be kept at least two-thirds full of ice at all times.

The tent cloth should be tucked around the patient's pillow, and the ends in front of the patient rolled together with the bed clothes so as to seal the lower end of the tent as closely as possible.

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Most tents have a side opening, easily opened and closed, through which the patient can be given medicine and foods.

If it is necessary to examine the patient's chest, or to wash the patient, the tent can be drawn up around his head and tucked in around his neck so that he will continue to receive oxygen during the procedure. With the tent in this position, portable x-ray apparatus can be put into place over the patient's chest and immediately before the picture is taken the oxygen can be shut off and the tent rolled away from the patient to another part of the room or ward. Immediately thereafter the tent may be replaced over the patient.

No tent is satisfactory unless it meets all of these requirements.

Portable Oxygen Room: A portable oxygen room which is extremely satisfactory, has recently been placed on the market. The cost is somewhere between that of an oxygen tent and a built-in oxygen room. It has all the advantages of a room with accessibility to the patient, does not require the use of soda lime and uses about three cylinders of oxygen a day and about 300 pounds of ice. The temperature in this room can be kept as low as 65 degrees on even a hot summer day, with a relative humidity of about 40 per cent. It can be set up permanently in a hospital or it can be taken to a private home and set up in one and one-half hours.

Cost Is Not Excessive

The cost of oxygen treatment is not excessive. The large scale use of oxygen for many purposes has led to the availability of a product which contains no harmful impurities and which can be obtained at a reasonable price. The cost of oxygen is not the same in all communities and depends to a certain extent on the quantity of oxygen used. It is most economical to use oxygen supplied in large cylinders under high pressure, containing 220 cubic feet of this gas. As already mentioned, about one and one-half of these cylinders are needed a day when an oxygen tent is used, and about three cylinders a day are needed for a large oxygen room.

The oxygen tents cost from $300 to $500. A portable oxygen room costs about $1,000 and a built-in oxygen room costs from $3,000 to $4,000.

Although the use of oxygen therapy was undertaken seriously by a few men about fifteen years ago, it is only in recent years that it has become widely available and has caught the attention of the medical profession. To-day, it is being used more and more, and some pioneers are extending its use into fields other than those described in this review.

Safety Measures That Obviate the Dangers of Explosions

General measures to prevent explosions during the use of ethylene-oxygen or other anesthetic mixtures are listed by F. D. Johnston and H. Cabot in the *Archives of Surgery* as follows:

1. Enforcement of strict regulations prohibiting the use of electrical equipment or any obvious source of heat in the vicinity of the anesthetic equipment.

2. Thin sheet metal—either copper, brass or rustless steel—flooring forming a continuous pathway from the anesthetic rooms across the hall into the operating rooms, where it should cover most of the floor space.

3. Chains electrically connected to and suspended from the anesthetic machines and other movable equipment so as to drag on the metal floor.

4. Inspection of breathing tubes to make certain that the spiral conductor embedded therein projects into the lumen of the tube and that it is electrically joined to the metal pieces at the extremities of the hose. The breathing tubes should be covered by a coarse network of copper wire, which should likewise be soldered to its metal ends. Metal plates connected electrically to the metal floor should be placed on the outside of all doors leading into the operating rooms in such a way that one cannot open the door without touching the metal plate.

5. Connection between the patient and the metal frame of the operating table by means of a chain ending in a suitable piece of metal which must rest against his skin.

6. Holes cut in the rubber mat on the carriage of the machines and insulating paint removed from the metal platform at these points, so that the tanks will be positively grounded to a frame of the apparatus.

7. Installation of a device to prevent the exhaust gases from being poured out into the operating rooms.

Measures to prevent explosions due to static spark within the machines are listed as follows:

1. Trial of a small quantity of a radioactive substance within the rubber rebreathing bag. If this method does not absolutely prevent charges from accumulating on the bag, the bag should be replaced with a manometric device.

2. Inspection of the check valve admitting gases into the mixing chamber weekly to make sure that the valve and the valve seat are clean and dry. During the cold months of the year, an occasional test with a gold leaf electroscope to ensure that the system is actually eliminating the danger from static electricity.

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NEWS OF THE MONTH

Council on Medical Education and Hospitals Announces Program

THE functions of the hospital, care of the veteran, physical therapy in hospitals for veterans, and hospitals for the treatment of nervous and mental patients are among the subjects of interest to hospital executives who will attend the annual congress on medical education, licensure and hospitals of the Council on Medical Education and Hospitals, American Medical Association, in Chicago, on February 15 and 16. The congress will be held in the Palmer House. Two other groups will participate in the congress—the Federation of State Medical Boards of the United States and the American Conference on Hospital Service.

The first morning will be devoted to a discussion of the functions of the hospital, with Dr. Ray Lyman Wilbur, chairman, Council on Medical Education and Hospitals, Washington, D. C., as presiding officer. He will also give the first address, his subject being "The Fundamental Place of the Hospital in the Practice of Medicine." Other speakers and their subjects are: "The Hospital Serves," Dr. Bert W. Caldwell, executive secretary, American Hospital Association, Chicago; "The Hospital as a Medical Service Center," C. Rufus Rorem, Julius Rosenwald Fund, Chicago; "Some Problems on Nursing Education," Dr. W. S. Leathers, dean, Vanderbilt University School of Medicine, Nashville, Tenn. The first three papers will be discussed by the Rev. Maurice Griffin, Cleveland, and Doctor Leathers' paper will be discussed by Dr. E. P. Lyon, Minneapolis.

Meetings at which medical education and hospitals for the treatment of nervous and mental patients are to be discussed will be held in the afternoon. Dr. Maurice H. Rees, dean, University of Colorado School of Medicine, Denver, will preside at the afternoon session on medical education, while Dr. Harold Douglas Singer, chairman, American Medical Association's Advisory Committee on Hospitals for Nervous and Mental Patients, Chicago, will preside at the session on mental hospitals.

Speakers at the medical education session will include: Dr. S. Marx White, president, American College of Physicians, Minneapolis; Dr. C. C. Bass, dean, Tulane University School of Medicine; Dr. Hugh Cabot, surgical section, Mayo Clinic, Rochester, Minn.; Dr. Stephen Rushmore, Boston, and Dr. William Gerry Morgan, Washington, D. C.

Care of Mental Patients to Be Discussed

At the session on the hospitalization of mental patients, Dr. W. F. Lorenz, clinical director, Wisconsin Psychiatric Institute, Madison, will discuss the "Integration of University and State Service in the Hospitalization of Mental Cases"; Dr. F. A. Carmichael, superintendent, Osawatomie State Hospital, Osawatomie, Kan., will speak on "Advantages of Complete State Care for Mental Patients"; Dr. John M. Grimes, Council on Medical Education and Hospitals, Chicago, will give the preliminary report of the survey of hospitals for nervous and mental patients in the United States; Dr. G. Wilse Robinson, Kansas City, Mo., will discuss "The Private Care of Nervous and Mental Patients." Other speakers will include: Dr. Charles F. Read, Elgin, Ill., Dr. George A. Johns, St. Joseph, Mo., Dr. Franklin G. Ebaugh, Denver, Colo., Dr. William A. White, Washington, D. C., and Dr. Frank P. Norbury, Jacksonville, Ill.

Dr. Louis B. Wilson, director, Mayo Foundation for Medical Research, will preside at the second session on medical education, which is scheduled for the morning of the second day. Those who will take part in this program are: Dr. R. S. Cunningham, professor of anatomy, Vanderbilt University School of Medicine, Nashville, Tenn.; Dr. Irving S. Cutter, dean, Northwestern University School of Medicine, Chicago; Dr. James H. Means, Harvard University Medical School, Boston; Dr. James B. Herrick and Dr. Joseph L. Miller, Chicago; Dr. Dean Lewis, Johns Hopkins University, Baltimore, and Dr. Dallas B. Phemister, Chicago.

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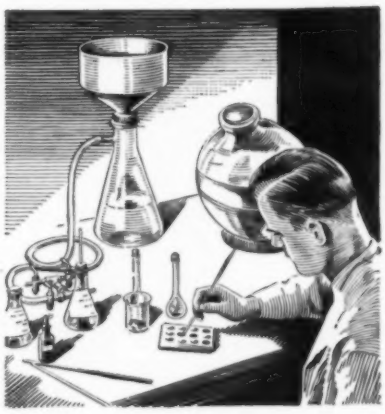

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NEWS OF THE MONTH (Cont'd)

The care of the veteran will be the theme of an afternoon's program on the second day to be presented by the American Conference on Hospital Service. The care of the veteran from the standpoint of medicine will be discussed by Dr. Harrison H. Shoulders, secretary, Tennessee State Medical Association, Nashville, Tenn.; from the standpoint of the American Legion; from the standpoint of the American Hospital Association, by Paul H. Fesler, president, American Hospital Association, Minneapolis, and from the standpoint of the Veterans' Bureau. Dr. Charles B. Wright, Minneapolis, will give a discussion of the papers presented.

The purpose of this program is to present a general discussion of some of the problems that have grown out of the present plan of the United States Government for the hospitalization of veterans.

Physical therapy in hospitals for veterans will form the discussion theme at a joint session of the council on physical therapy of the American Medical Association and the American Conference on Hospital Service.

Sessions will be held also on the "Regulation of Medical Specialists," "Corporate and Contract Practice," and "Teaching of Radiology."

For those interested in obtaining reduced rates to Chicago, the *Journal of the American Medical Association* gives the following information:

"In order to obtain the reduced rate of one and one-half fares for the round trip to Chicago, it will be necessary to secure at least 100 receipts showing that full fares have been paid on the trip to Chicago. The reduced rates, if enough receipts are secured, will apply to friends and relatives as well as to those regularly invited to the congress.

"Be sure to obtain a certificate receipt for your fare to Chicago."

Bassett Hospital Annual Payment Plan to Continue

During the past year the Mary Imogene Bassett Hospital, Cooperstown, N. Y., has had in operation a scheme known as the Bassett Hospital Guild, now called the Bassett Hospital Annual Payment Plan. This scheme is essentially a health insurance, the hospital, through its staff agreeing to give medical and surgical care to members of the annual payment plan for a period of one year in return for membership dues of $25 for an individual, and $100 for an entire family. If so desired, the dues may be paid in monthly installments.

A recent canvass of those who have been members during the past year has shown almost unanimous satisfaction with the scheme and an expressed intention on the part of over 95 per cent to re-enroll. It has therefore been decided to continue the Bassett Hospital Annual Payment Plan throughout 1932.

Those who are regular patients of doctors not on the hospital staff will not be asked to become members of the annual payment plan.

New Food Clinic Now Functioning at Pennsylvania Hospital

Pennsylvania Hospital, Philadelphia, established on January 1 a food clinic in its out-patient department. The clinic is in charge of Martha Alderman, who has recently completed two years as supervising dietitian of the North End Clinic, Detroit.

The food clinic at Pennsylvania Hospital has been organized to assist the physicians in carrying out food treatment as a part of the medical treatment of the ambulatory patient. The recommendations are to be interpreted to the patient through advice, consulation and administration, in terms that he can understand. Any cases in which diet plays an important rôle are to be referred to the clinic. Cases such as diabetes, gastro-intestinal disturbances, constipation, obesity, malnutrition, nephritis, hypertension, anemia and other conditions requiring dietary control will be treated.

The advent of such a clinic makes it possible, because of the large number of cases of children of preschool age, especially those who present problems relating to malnutrition, poor food and habit training, to correlate the work of the food clinic with departments outside of the hospital interested in the physical, mental and social welfare of the patient. Through the food clinic, valuable instruction will be given to the patients in the prenatal and postnatal clinics.

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NEWS OF THE MONTH (Cont'd)

Midwest Dietitians Hold Regional Meeting in Chicago

The regional meeting of the Midwest dietitians which for the past four years has been sponsored by the Chicago Dietetic Association was held January 29 and 30 at the Belden-Stratford Hotel, Chicago. This year it was sponsored by the new Illinois State Dietetic Association, as its first annual meeting.

A two-day session of interesting programs was held. The first morning was given over to trips. One of the two unusual trips which were included was a tour led by Faith McAuley, professor of institutional economics, University of Chicago, through the interesting produce markets of Chicago. The other was a visit to the play school of the Infant Welfare Society of Chicago. Two hospital trips were planned, one to the Presbyterian and Cook County Hospitals and the other to Michael Reese Hospital.

The formal program began on Friday afternoon, with the president, Millie E. Kalsem, dietitian, Cook County Hospital, presiding. Many varied and interesting subjects were discussed. Dr. Walter G. Eddy, professor of physiological chemistry, Columbia University, talked on the subject of "Nutrition with Relation to Canned Foods." "Food Administration at the Chicago World's Fair" was discussed by Dr. A. W. Bitting, director of food administration for the Century of Progress, and at the buffet luncheon on Saturday, Helen Bennett, of the social science division of the Century of Progress, talked on "Building a World's Fair."

Dr. William G. Rose, head of the department of physiological chemistry, University of Illinois, gave a paper on "The Importance of Amino-Acids in Nutrition," illustrated with pictures and slides. Dr. Max Cutler, director of the tumor clinic, Michael Reese Hospital, presented an unusual film on "The Extraction and Manufacture of Radium."

A major in foods and nutrition is one of the requirements for membership in the American Dietetic Association. Dr. Lydia J. Roberts, chairman of the department of home economics, University of Chicago, outlined what she considered necessary for such a major.

The annual dinner meeting on Friday night was a joint meeting with the Chicago Dietetic Association. Millie E. Kalsem presided and presented Dr. A. J. Carlson, chairman of the department of physiology, University of Chicago. Doctor Carlson talked on "Thirst."

The president introduced the following guests of honor: Dr. Solomon Strouse, associate professor of medicine, Rush Medical College, Chicago; Dr. Martha Koehne, president, American Dietetic Association; Frances Swain, president, American Home Economics Association; Fannie M. Brooks, president, Illinois State Nurses' Association; Dr. Bert Caldwell, executive secretary, American Hospital Association. Sarah Elkin, president, Chicago Dietetic Association, then presented the 1931 speakers of the Chicago association.

The officers of the Illinois State Dietetic Association are: president, Millie E. Kalsem, Cook County Hospital, Chicago; first vice-president, Anna E. Boller, Central Free Dispensary at Rush Medical College, Chicago; second vice-president, Evelyn Smith, assistant professor of management, University of Illinois; secretary, Ella M. Eck, University Clinics, University of Chicago; treasurer, Bernice Lane, Methodist Hospital, Peoria, Ill.

Central Council's Third Institute to Be Held February 15

The Central Council for Nursing Education will hold the third annual institute for lay boards of directors of hospitals and public health nursing organizations at the Palmer House, Chicago, Monday, February 15, at the time of the annual meeting of the Council on Medical Education and Hospitals, American Medical Association.

Among the speakers of prominence taking part in the program will be: Dr. Herman N. Bundesen, commissioner, Department of Health, Chicago; Dr. Malcolm T. MacEachern, director of hospital activities, American College of Surgeons, Chicago; Katharine Tucker, general director, National Organization for Public Health Nursing, New York City; Emilie G. Sargent, executive director, Visiting Nurse Association, Detroit; Ella F. Best, acting executive secretary, National League of Nursing Education, New York City; Miriam Ames, executive director, Joint Committee on Hourly Nursing, Chicago.

Dr. E. P. Lyon, dean, University of Minnesota Medical School, Minneapolis, will be the luncheon speaker. He will speak on "The Crisis in Nursing."

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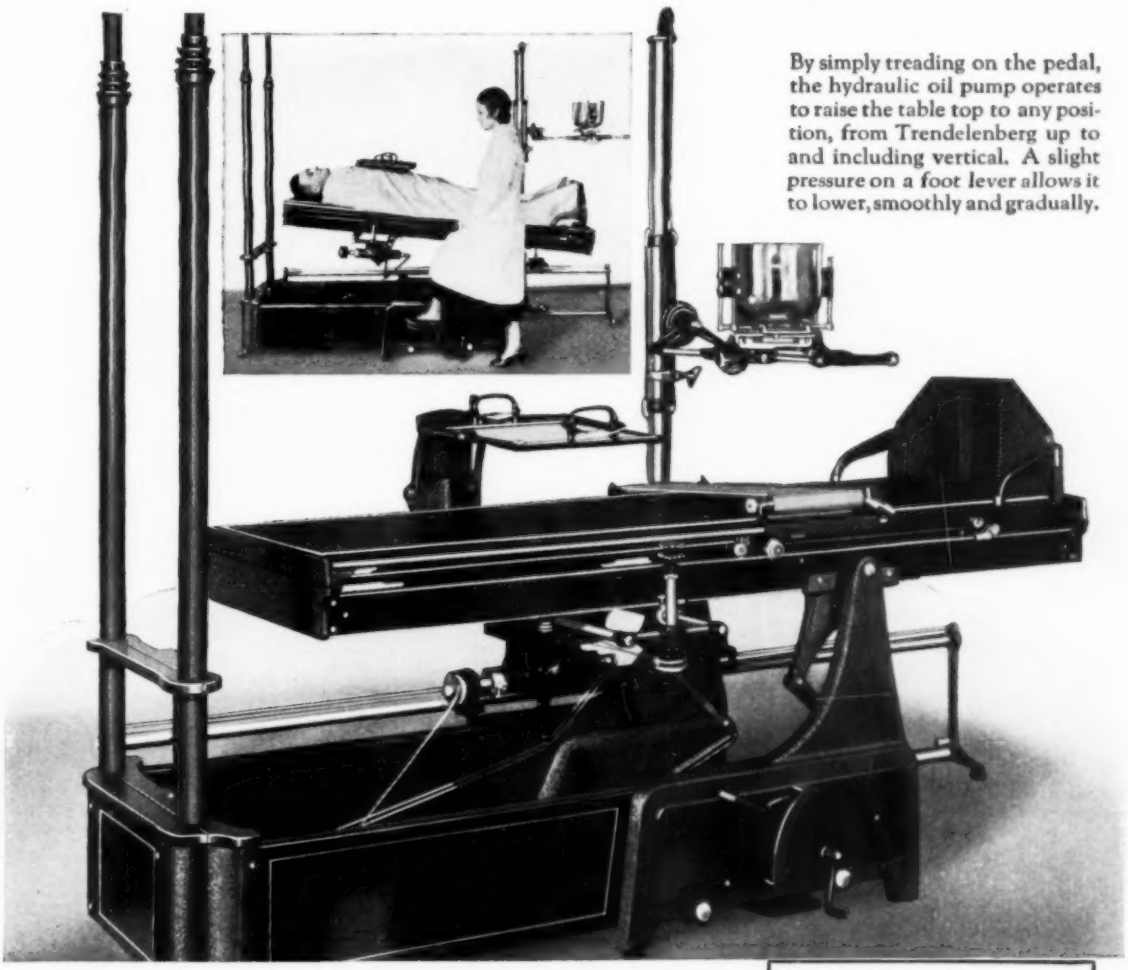

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NEWS OF THE MONTH (Cont'd)

Coming Meetings

American Association of Hospital Social Workers.
President, Elizabeth Wisner, Tulane University, New Orleans.
Executive secretary, Helen Beckley, 18 East Division Street, Chicago.
Next meeting, Philadelphia, May 14-21.

American College of Surgeons.
President, Dr. Allen B. Kanavel, 54 East Erie Street, Chicago.
Director general, Dr. Franklin H. Martin, 40 East Erie Street, Chicago.
Next meeting, St. Louis, October 17-21.

American Conference on Hospital Service.
President, Dr. Harry E. Mock, 122 South Michigan Avenue, Chicago.
Secretary, Evelyn Wood, 8 South Michigan Avenue, Chicago.
Next meeting, Chicago, February 16.

American Hospital Association.
President, Paul H. Fesler, University Hospital, Minneapolis.
Executive secretary, Dr. Bert W. Caldwell, 18 East Division Street, Chicago.
Next meeting, Detroit, September 12.

American Nurses' Association.
President, Elnora E. Thompson, University of Oregon, Portland.
Publicity secretary, Eleonore von Eltz, 450 Seventh Avenue, New York City.
Next meeting, San Antonio, Texas, April 11-16.

American Protestant Hospital Association.
President, Rev. A. O. Fonkalsrud, Mansfield General Hospital, Mansfield, Ohio.
Executive secretary, Dr. Frank C. English, Hyde Park, Station O, Cincinnati.
Next meeting, Detroit, September 9-12.

Annual Congress on Medical Education, Licensure and Hospitals.
Next meeting, Chicago, February 15.

Colorado Hospital Association.
President, Frank J. Walter, St. Luke's Hospital, Denver.
Executive secretary, William S. McNary, University of Colorado School of Medicine and Hospital, Boulder.
Next meeting, Boulder, June 7.

Iowa Hospital Association.
President, Robert E. Neff, University of Iowa Hospitals, Iowa City.
Secretary, Clinton F. Smith, Allen Memorial Hospital, Waterloo.
Next meeting, Sioux City, March 9-10.

Michigan Hospital Association.
President, L. J. McKenney, Highland Park General Hospital, Highland Park, Mich.
Secretary, Robert G. Greve, University Hospital, Ann Arbor.
Next meeting, Flint, May 17-18.

Minnesota Hospital Association.
President, Dr. Fred G. Carter, Ancker Hospital, St. Paul.
Secretary-treasurer, James McNee, St. Luke's Hospital, Duluth.
Next meeting, Minneapolis, May 23-25.

National Methodist Hospitals, Homes and Deaconess Work Association.
President, Dr. John G. Benson, Methodist Episcopal Hospital, Indianapolis.
Secretary, Guy M. Hanner, Beth-El General Hospital, Colorado Springs, Colo.
Next meeting, Chicago, February 10-12.

New England Hospital Association.
President, James A. Hamilton, Mary Hitchcock Hospital, Hanover, N. H.
Secretary, Dr. Morgan J. Rhees, Massachusetts General Hospital, Boston.
Next meeting, Boston, February 5-6.

New Jersey Hospital Association.
President, Dr. George O'Hanlon, Jersey City Medical Center, Jersey City.
Executive secretary, Marie Louis, Muhlenberg Hospital, Plainfield.
Next meeting, Atlantic City, May 3-4.

Hospital Association of New York State.
President, Carl P. Wright, Syracuse General Hospital, Syracuse.
Secretary, Julian Funt, Beth Israel Hospital, New York City.
Next meeting, New York City, May 5-7.

North Carolina Hospital Association.
President, Dr. Harold Glascock, Mary Elizabeth Hospital, Raleigh.
Secretary, Edwin G. Farmer, Carolina General Hospital, Wilson.
Next meeting, Richmond, Va., May 17-19.

Ohio Hospital Association.
President, Dr. C. S. Woods, St. Luke's Hospital, Cleveland.
Executive secretary, John R. Mannix, University Hospitals, Cleveland.
Next meeting, Akron, March 15-16.

Hospital Association of Pennsylvania.
President, M. H. Eichenlaub, Western Pennsylvania Hospital, Pittsburgh.
Secretary, Howard E. Bishop, Robert Packer Hospital, Sayre.
Next meeting, Pittsburgh, March 15-17.

South Carolina Hospital Association.
President, F. O. Bates, Roper Hosp., Charleston.
Secretary, H. H. McGill, Columbia Hospital of Richland County, Columbia.
Next meeting, Richmond, Va., May 17-19.

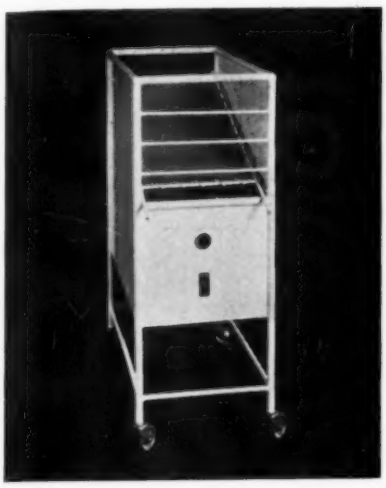
Texas State Hospital Association.
President, Robert Jolly, Memorial Hospital, Houston.
Secretary, Joe F. Miller, Jefferson Davis Hospital, Houston.
Next meeting, Dallas, April 8-9.

Virginia Hospital Association.
President, Dr. Knowlton T. Redfield, Jefferson Hospital, Roanoke.
Secretary, M. H. Coleman, Jr., Johnston-Willis Hospital, Richmond.
Next meeting, Richmond, May 17-19.

Western Hospital Association.
President, Dr. B. W. Black, Highland Hospital, Oakland, Calif.
Secretary, Mrs. L. M. Armstrong, Los Angeles.
Next meeting, Salt Lake City, Utah, June 14-16.

AN ANNOUNCEMENT AND A PROMISE

SYACO Steel Furniture and Equipment



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SCIALYTIC entry into the field of hospital furniture marks a definite milestone in the development of design, fabrication and finish of steel furniture and cabinet equipment; mobile or built-in.

A promise of unusual features — thoroughly practical; and an engineering service founded on the best facilities available in the field; *and extraordinary values for every dollar of your equipment budget.*

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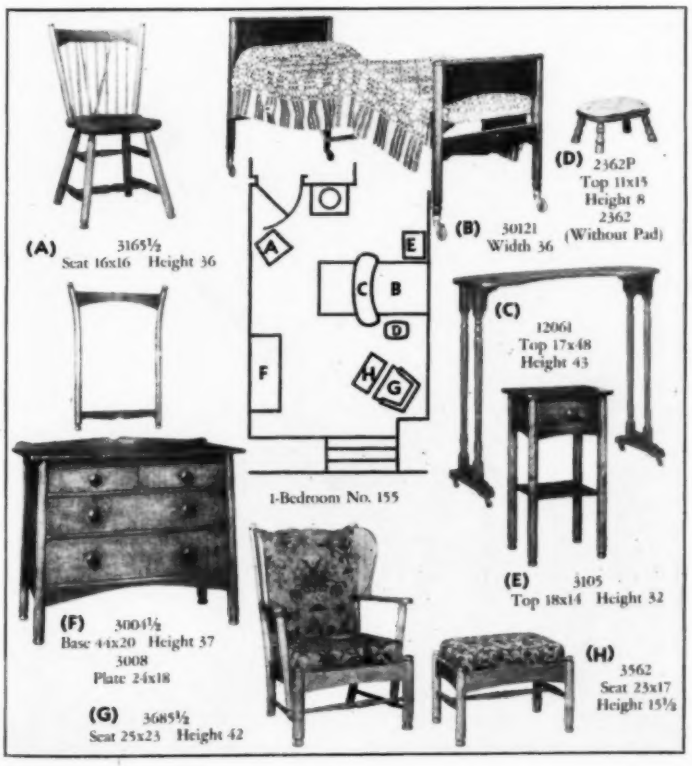

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ST. ADDRESS.....

CITY..... STATE.....

NEWS OF THE MONTH (Cont'd)

A. H. A. President Is Named Head of Wesley Memorial, Chicago

Paul H. Fesler, superintendent, University of Minnesota Hospitals, Minneapolis, and president, American Hospital Association, has been appointed superintendent, Wesley Memorial Hospital, Chicago. Mr. Fesler will fill the position left vacant by the death of Eugene S. Gilmore, who died on September 12.

Mr. Fesler has had a wide experience in hospital administration. He served as superintendent, University Hospital, University of Oklahoma,

from 1915 to 1927. In 1927 he became head of the University of Minnesota Hospitals. In 1926 Mr. Fesler was elected president of the Oklahoma Hospital Association and in 1930 was chosen head of the Minnesota Hospital Association.

Recognition of Mr. Fesler's active interest in national hospital affairs came with his election to the presidency of the American Hospital Association in October, 1930, a position he now holds. At the present time he is also chairman of a committee appointed by the trustees of the American Hospital Association to seek the further hospitalization of war veterans in already existing civilian hospitals.

Two Hospitals in Newark Join in Merger

The Hospital of St. Barnabas and the Hospital for Women and Children, Newark, N. J., merged on January 1. A single board of trustees is now managing the two hospitals, which will function separately until a new building is erected on the St. Barnabas Hospital site. At that time the physical merger will be effected.

The institution is to be known in the future as the Hospital of Saint Barnabas and for Women and Children.

Baptist Hospital, Houston, Tex., Changes Name

Baptist Hospital, Houston, Tex., of which Robert Jolly is superintendent, is now known as Memorial Hospital. The change in the name of the hospital was effective January 1.

Waldman Cafeteria Wins in Suit Over Tray Rail

The Waldman Cafeteria of Denver, Colo., which had refused to pay the tray rail license fee demanded by the Mapleton Corporation, holders of the Weston Patent involving the use of the cafeteria tray rail principle of food service, was victorious in a suit brought by the corporation and heard in the Federal district court for the District of Colorado sitting in Denver.

In the opinion of Judge Symes, who heard the evidence, the cafeteria tray rail, as defined in the patent, did not constitute a patentable combination and the claim of the Mapleton Corporation was therefore invalid.

The Waldman Cafeteria was backed in its court fight against the suit by the Food Service Equipment Association.

THE STAFF SAYS, "FINE"

THE BUDGET ADDS, "O.K."

OF COURSE your staff wants more and more radiographs. For x-ray service provides some of their most dependable diagnostic information. To care for patients effectively . . . to build reputation and good-will for your institution, the members of your staff should have available all possible radiographic information to assist in completing diagnoses.

When Eastman Ultra-Speed and Diaphax X-ray Films are used, they have the advantages of better radiographs, and still costs are kept low. These films are sensitive, fast—they record sharp detail even of soft tissue and parts that cannot be immobilized. Their uniformity facilitates standardization in exposure and processing. Fewer retakes are necessary; materials, time, wear and tear on tubes and equipment, are saved.

Eastman Ultra-Speed and Diaphax X-ray Films may be obtained on *safety* or nitrate base. They have every desirable characteristic, yet cost no more than ordinary films.

EASTMAN X-RAY FILMS—the accepted radiographic media the world over

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Gentlemen: Please send me the free booklet, "X-rays in Medicine."

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Institution _____

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NEWS OF THE MONTH (Cont'd)

Los Angeles Dietitians Speak at Sectional Meeting

The southern section of the California Dietetic Association met in Los Angeles, February 1.

The program was featured by speeches by Mildred Eby, Manual Arts High School, Los Angeles, on "The Use of the 'Share' System in Classroom Demonstration"; by Harriet Ochs, Los Angeles Metabolic Clinic on "Clinic Instruction by the Dietitian," and by Reeva Hinyan, California Hospital, Los Angeles, on "Diet Courses for the Hospital Intern."

St. Luke's, Cleveland, Honors the President of Its Board

St. Luke's Hospital, Cleveland, recently celebrated the twenty-fifth anniversary of Francis F. Prentiss' incumbency of the office of president of Saint Luke's Hospital Association and of the board of trustees. The speakers were: the Hon. Newton D. Baker, Bishop Herbert Welch of the Methodist Episcopal Church and Dr. Morris D. Stepp, the only active member of the staff who was a member of the staff twenty-five years ago. The Rev. Dr. T. S. McWilliams presided.

The celebration was held in Prentiss Hall.

Committees Will Meet to Consider Civilian Care of Veterans

By PAUL H. FESLER
President, American Hospital Association

Committees representing the American Hospital Association, the American Medical Association and the American Legion will meet with the rehabilitation committee of the American Legion and the medical advisory committee of the Veterans' Administration in Washington, D. C., on February 1 and 2. Dr. Frederic A. Washburn, director, Massachusetts General Hospital, Boston, Dr. Nathaniel W. Faxon, director, Strong Memorial Hospital, Rochester, N. Y., Dr. S. S. Goldwater, New York City, Dr. Bert W. Caldwell, executive secretary, American Hospital Association, and Paul H. Fesler, president, American Hospital Association, are the representatives who will present the program of the American Hospital Association regarding hospitalization of veterans in existing civilian hosptals.

This program is simple. It simply means that the law be amended to make it possible for the Government to hospitalize men with nonservice disabilities in civilian hospitals. It is well known that there are thousands of such men who are in need of immediate emergency hospital care, but who are not able to gain entrance to overcrowded Government hospitals.

Many Veterans Need Hospital Care

At the same time, it is well known that there are thousands of mental patients waiting for admission to the Government hospitals who, if it were made possible, could be cared for in civilian hospitals.

The American Hospital Association will present to the American Legion and the Veterans' Bureau a list of more than twenty-five thousand beds that are available in civilian hospitals. Many of these hospitals can meet the standards of any organization. The American Hospital Association recommends that the Veterans' Administration be given the authority to say in which hospitals the veterans should be placed.

The resolution adopted at the meeting of the American Hospital Association in Toronto fully covers this matter. Members of the association should carefully study the resolution and do all in their power to induce influential persons of their community to get in touch with congressmen, members of the American Legion and others to urge the passage of this amendment.

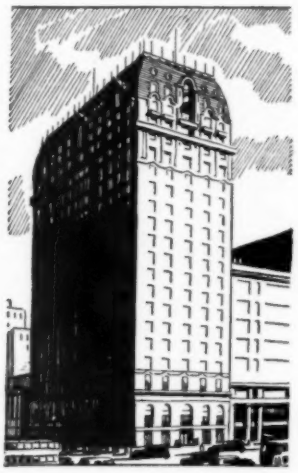
An Unselfish Cause

The cause is unselfish and will benefit the ex-service men. The peak of mental disease, cancer, heart disease and other conditions has not been reached.

Hospital boards and others familiar with existing conditions must take an active interest in this movement, if the veterans are to receive adequate scientific medical care.

This amendment will soon be prepared and should be intensively pressed in all state and local hospital associations.

The members of the committee deeply appreciate the cooperation on the part of THE MODERN HOSPITAL in promoting this movement.



The Blackstone, Chicago

Hotel Cleveland

The Shoreham, Washington, D. C.

The Brown Hotel, Louisville

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Not a dollar has ever been paid for a SPRING-AIR *testimonial*

The greatest SELLERS OF SLEEP *...are proving their preference for...* SPRING-AIR

Good hotels vary in many degrees of service and atmosphere but they are alike in that they *sell sleep.*

A case in point, then, for you who use sleep as a fundamental part in rebuilding health, to compare notes with those who make a business of selling sleep.

The facts are quite plain. SPRING-AIR has won preference in the Hotel field just as it has won preference with the finest Hospitals. Such famous hotels as The Claridge at Atlantic City, The Shoreham at Washington, D. C., Hotel Cleveland, The Brown at Louisville, and the Blackstone at Chicago are typical of the institutions that have demonstrated their SPRING-AIR preference by buying and re-buying.

This is the type of testimonial that is real and worth while: in less than four years the SPRING-AIR Mattress has been installed in more than one thousand of the nation's leading hotels and hospitals.

There is only one sharp point of difference in SPRING-AIR'S record in the Hotel and Hospital fields. There are *many* types of mattresses that compete for the hotel order. Outstanding victory for one product is harder to achieve. In the Hospital market there *are* competing mattresses but there is only one SLEEP CUSHION TYPE and that is SPRING-AIR. And it is the sleep cushion type that is especially suited to hospital demands.

You can demonstrate SPRING-AIR'S superiority in actual test service in your own hospital. Communicate with the secretary at Holland, Michigan, to secure a sample for testing purposes.

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The secretary at Holland, Michigan, will direct inquiries to the nearest source of supply

PERSONALS

DR. K. H. VANNORMAN was recently elected superintendent, Harborview Hospital, Seattle, Wash. DOCTOR VANNORMAN was formerly superintendent, University Hospitals, Cleveland. He was at one time on the staff of Johns Hopkins Hospital, Baltimore, and later was corrected with the Charles T. Miller Hospital, St. Paul, Minn.

DR. DENNETT L. RICHARDSON, superintendent, Charles V. Chapin Hospital, Providence, R. I., is the newly elected superintendent of health and city registrar for Providence, these offices to be combined with the hospital superintendency. He was recently named successor to DR. CHARLES V. CHAPIN whose term as superintendent of health expired on January 4. DOCTOR CHAPIN'S term as city registrar still has another year to run. In his new position, DOCTOR RICHARDSON will manage the activities of all three offices. The Charles V. Chapin Hospital was formerly the Providence City Hospital.

JULIA A. MILNE has recently been appointed as superintendent, Sapulpa Hospital, Sapulpa, Okla.

MARY ELLEN NORWALD, formerly of the Coleman Hospital, Indianapolis, has been appointed superintendent, City Hospital, Rushville, Ind.

BESS C. HORNBEAK has recently assumed the superintendency of Seaside Hospital of Long Beach, Long Beach, Calif.

GLADYS H. SULIS is the new superintendent at Payzant Memorial Hospital, Windsor, Nova Scotia.

MILDRED SHRYOCK has recently become superintendent of the Sterling Hospital, Sterling, Colo.

SISTER ST. BEATRICE, who for the past six years has held the office of general treasurer at the Motherhouse and l'Hôpital de la Miséricorde, Montreal, Quebec, is now superintendent at Oak Park Hospital, Oak Park, Ill.

DR. EARL K. HOLT has recently been appointed to the superintendency of Medfield State Hospital, Medfield, Mass.

E. G. BAGLEY, manager, Biltmore Hospital, Biltmore, N. C., has resigned. MR. BAGLEY was formerly manager, Wesley Long Hospital, Greensboro, N. C.

DR. JOHN C. MACKENZIE, who has been serving the Montreal General Hospital, Montreal, Canada, as acting superintendent for the last several months was appointed general superintendent of the hospital on January 21.

CAPT. C. S. BUTLER has been appointed as the new commanding officer of the United States Naval Hospital, Brooklyn, N. Y.

ATHEL SAMUELS, R.N., has been appointed superintendent of the Decatur County Memorial Hospital, Greensburg, Ind.

DR. SAMUEL SIDNEY WOODY, superintendent, Philadelphia Hospital for Contagious Diseases for twelve years, died on December 28 following a heart attack.

DR. ROBERT E. BALDWIN has been chosen head of the Tampa Municipal Hospital, Tampa, Fla., succeeding W. I. WEBB, acting superintendent.

T. J. MCGINTY, formerly superintendent, Oklahoma Baptist Hospital, Muskogee, Okla., has been named superintendent, Davis Hospital, Pine Bluff, Ark. The Davis Hospital has recently been reorganized to serve a wider territory than it has heretofore. Dr. B. A. Wilkes is the hospital consultant.

Activity in Hospital Building Is Predicted

Prognostications of the building activities in the hospital field during the first quarter of this year are given in the January issue of the *Architectural Record.*

In the first quarter of 1931, there was spent for hospitals and institutions $25,606,300. This was increased in the second quarter. The third quarter figures showed a slight decrease over the second quarter, while the fourth quarter revealed expenditures considerably lower than those of the first quarter. The total sum spent for hospital and institutional construction during 1931 was $117,001,900. The sum that is estimated to be spent during the first quarter of 1932 is $20,000,000—in thirty-seven states east of the Rocky Mountains.

(Additional news items will be found on page 150)

Chief of the American Line

TOMAC

wishes to remind you that the

PNEUMONIA MONTHS are here . . . and that OXYGENAIRE can help you meet the emergencies they bring

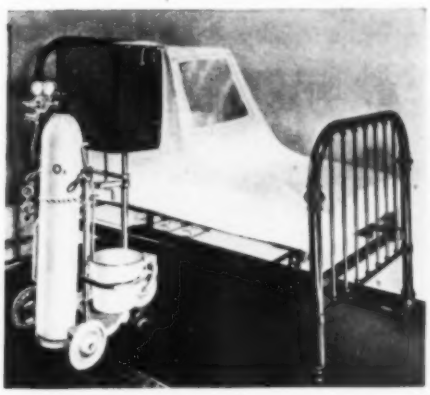
The introduction of Oxygenaire has brought an improved technique for treating "air hunger." During the next few weeks you are sure to have emergency cases that will need the service only Oxygenaire can render so efficiently.

Oxygenaire overcomes the three most common problems in administering oxygen: (1) excessive heat in tent; (2) moisture thrown off by the patient; and (3) excessive accumulation of carbon dioxide.

Oxygenaire is simple in construction, compact, built for carefree service, and is easy to operate. It offers you the means of capably combatting your cases of oxygen deficiency.

Several Oxygenaire users report that their equipment is more than self-sustaining.

We have just published a treatise, "Pertinent Facts on Oxygen Therapy," which will be gladly sent you upon request.



EXCLUSIVE FEATURES OF OXYGENAIRE

1. Safety. 2. Air in tent is cooled and circulated by convection—no motors, blowers or injectors. 3. Positive temperature control through dampers. 4. Can be operated without disturbing patient. 5. Apparatus is portable because it is built complete on one chassis. 6. All parts can be easily sterilized. 7. A large and small tent with big windows available to suit individual cases. 8. Operates successfully with or without soda lime. 9. Economical in cost and operation.

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NURSING AND THE HOSPITAL

Conducted by M. HELENA MCMILLAN, R.N.
Director, School of Nursing, Presbyterian Hospital, Chicago

Nursing Education *Versus* Nursing Service

By E. MURIEL ANSCOMBE
Superintendent, Jewish Hospital, St. Louis

THE past five years have marked a never to be forgotten epoch in the history of our hospitals. The standards of nursing service have been set higher than ever before. Although the care of the sick has been woman's prerogative since time immemorial, never before has nursing service been so clearly defined as now. Never before have the nurses tried to present to the public they serve so great a plea for sympathetic understanding, for clear knowledge of the objectives of their profession.

Nursing service has developed only as medical science has developed. With the development of medical science has come a new nursing service. But has this service been permitted to progress in proportion to the progress of medical needs?

The inadequately trained nurse cannot discharge the duties that are demanded to-day in preventive and curative medicine. The problem of preparing for such a service is one not to be borne by one individual or one organization, but rather by the public. But before hospitals solicit the needed support of the public in properly carrying out their educational program, must they not present themselves to the public? Hospitals have been hesitant about doing this.

Nursing schools are doing what the medical schools did a few years ago. They are daring to take an inventory, to admit their weaknesses, to demand standards and to seek help in establishing and maintaining them. This cannot be done by leaders in nursing education alone. The time has come for a true understanding of nursing needs by boards of trustees, hospital superintendents and the public as well as by the professional group. The analysis must be made upon mutual agreement, not upon antagonism and destructive criticism among hospital superintendents and schools of nursing executives. The needs of nursing education and of nursing service must be worked out separately step by step.

Dr. W. H. Burton, professor of education, University of Chicago, in his discussion of the administration of supervision before the National League of Nursing Education, Atlanta, Ga., sounded these two vital warnings: (1) Do not reject theories because they were tried once and did not work; (2) do not reject a perfectly good theoretical thing because of a practical obstacle. Rather, get a functioning organization with the fields of authority carefully defined.

Personally, I believe that it is not so much a question of separating the school and the hospital as it is a matter of a proper reorganization, with divisions of authority and understanding in an already existing dualistic organization. As has been pointed out so many times, the problems of nursing service revolve chiefly around the fact that the question of finance has made and is making it necessary to place the responsibility of nursing service upon the students. Excellent team work will produce more publicity than any method of which I know. The survey of the Committee on the Grading of Nursing Schools and the surveys of various hospitals have served to accentuate the necessity for hospital administrators and nursing school executives to work side by side with a proper understanding and with a mutual agreement as to what constitutes good nursing service and how to obtain it.

The needs of nursing service cannot be met if the problem is to be considered in its economic phase only. No school of nursing can properly function if its main objective is to supply student

How the Hackley Hospital

Saves Soap . . . and Saves Linens . .

Hackley Hospital, Muskegon, Michigan

ONE of the most highly regarded hospitals in Michigan is the Hackley Hospital at Muskegon. For years the management of this hospital had been aware of the fact that many troubles were caused by the hardness of their water supply, but had not known how to rid themselves of it.

These troubles were felt in various ways, especially in the laundry and in boilers. Soap did not dissolve readily, but formed sticky curds that made washing difficult and unsatisfactory. And scale formed in the boilers, requiring frequent shutdowns for repairs and cleaning. Needless to say, these shutdowns were expensive.

Eventually, however, they learned about Permutit and installed water softening apparatus that removes absolutely all the hardness from their entire water supply.

The immediate results were very gratifying. Soap and soda consumption was cut in half, while linens and fabrics took on a clean white softness never before experienced. Scale stopped forming in the boilers and the big expense it caused in labor bills and wasted fuel was eliminated.

A recent letter from the superintendent states in part:

"We had considerable trouble in our laundry before softening the water. It seemed impossible to get a proper rinse and we replaced linen and blankets with greater frequency than since installing the Permutit Softener . . . the consumption of soap in the laundry has been at least 50% less. I would not hesitate to recommend a water softener in any Institution where they have hard water conditions to combat."

Hard water makes soap curds, not suds, thus wasting soap

Soap curds deposit on fibres during laundering, destroying quality and shortening life

Our booklet, "Reducing Costs and Improving Hospital Service With Soft Water," will be definitely helpful to the management of every hospital—it is full of useful facts, and goes most thoroughly into the subject of the hospital water supply. A copy will gladly be sent free on request, without obligation—write for it today.

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440 FOURTH AVENUE, NEW YORK

Manufacturers of all types of Zeolite, Hot and Cold Lime Soda, Lime-Barium Water Softeners. Sand Filters, Iron, Oil and Manganese Removing Filters. Continuous Boiler Blowoff Equipment. Ranarex CO_2 Indicators and Recorders. Other Power Plant and Water Treating Specialties.

Permutit

Water Softeners

TWENTY-THREE BRANCH OFFICES THROUGHOUT THE UNITED STATES

BP.62 February

labor for the hospital. No nursing need can be properly met if the hospital is asked to meet the educational cost of the nurse by placing additional fees on the patient. How then shall it be met? The first job is publicity, the right kind of publicity. Hospitals cannot win public sympathy and obtain the funds with which to maintain their schools of nursing on a strictly academic basis if they continue to place before the public eye articles in which they point out that there are already too many nurses, that the opportunities in the field are poor. Several years ago propaganda that decried the shortage of nurses flooded schools of nursing with the same students who are now branded as incompetent nurses.

Are There Too Many "Trained" Nurses?

Let us turn to the report of the grading committee which states that half of the schools of nursing are connected with hospitals that average daily seventy-five patients or less, and that a fourth of the schools are connected with hospitals that average forty-two patients or less. Half the graduates that have been placed in the field have never finished high school. Only half of the students who enter the schools complete their course of training. True, we do have one graduate for every 590 inhabitants, yet we do not dare to say that we have in the field too many properly educated nurses. Must we then not present the true facts to the public conscientiously and fearlessly?

We are seeking to raise the standards of our nursing service. This can be done if we raise our educational standards also. The educational standards can be raised and nurses properly educated when the economic situation in relation to the school ceases to be borne entirely by the hospital administration. The patients are entitled to care given by properly trained nurses and the students are entitled to an academic education which is not overbalanced by ward practice.

Nursing education is a public responsibility and must be accepted as such. Many of our professional groups as well as the lay public are still thinking in terms of twenty-five years ago. Stimulation is needed not by the lay public alone but by our own institutions. We ourselves must believe as well as teach the public that if we wish good nursing service, then we must be willing to pay for it. The fault lies not with nursing service, but rather it is a result of the misplacement of responsibility in the financing of nursing education.

The progress of the hospital depends upon the education it gives. Are we "educating" or are we training? The survey of the grading committee has revealed that in half of the schools conducted by superintendents of nurses and in two-thirds of those conducted by superintendents of both services, there is either no instructor at all or only one. Hospitals with schools of nursing expect the student nurse to carry the nursing load of the hospital. Dr. May Ayres Burgess has further revealed in the report that 64 per cent of the nursing load is carried by student nurses and 7 per cent by the graduate floor duty nurse. The typical patient has been receiving three and a half hours of nursing care which has varied in institutions from a half-hour to eight and a half hours a day. Our second job, then, seems to be the acceptance of graduate nurse duty service. Are we not, perhaps, too much concerned with making our hospitals modern hotels rather than with working out a satisfactory nursing service within the reach of all classes? The grading committee has broken the ground for us in presenting statistical facts. The need is clear. The time has come to estimate and compare the cost of graduate and student nursing service.

Accurate studies have revealed astounding facts. They are opening the eyes of the doctor, the hospital board, the superintendent of the hospital and the public. Properly conducted schools of nursing are not financial assets. Thirteen per cent of the schools of nursing operate upon a budget; 24 per cent know the cost of the school of nursing; 34 per cent have stated they could probably figure out the cost and 42 per cent have admitted that under the existing organization they could not figure the cost. Does this not all clearly point to separate endowments and budgets for the school, thus making it unnecessary for hospitals to depend upon students for nursing service?

Shall Allowances Be Abolished?

All of us are familiar with the recommendation made in a special committee report adopted by the Colorado Hospital Association last year that schools of nursing abolish student allowances. There is much to be said in favor of such a step. Even though we recommend that scholarships be established to aid the worthwhile student who now depends upon such aid, we cannot abolish allowances nationally until our schools are established on a sound educational foundation and until the student ceases to be an economic necessity. We must be prepared to assure the student that we shall give to her the training and education she expects when she enters the school of nursing. We must be prepared to offer properly outlined courses taught by competent instructors, ward work that is efficiently supervised and clinical instruction that ensures a correlated service that is adequate in all departments essential to a rounded out service.

The cost of nursing service must be definitely

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ON THEIR merits, Sanymetal Steel Cubicles have won wide favor for subdividing children's wards. The junior size takes not quite half the floor area required for adults. Returns per square foot are increased, yet there is no crowding and the perils of cross-infection are avoided. Light, bright, homelike surroundings shorten the little folks' stay. Balls and other toys are much in evidence, glass partition panes being smaller and thicker to prevent breakage.

Cubicles cannot be thrown together carelessly. Each project is a study in itself. An intelligent answer comes only from an expert, complete survey. Accessible to you through the Sanymetal Engineering Department is a vast fund of data derived from similar installations of hospital cubicles for children.

Sanymetal builds steel ward screens and cubicles, fly and flap doors, corridor and smoke screens; toilet, shower and dressing compartments; office partitions and wainscot; gravity roller hinges for flap and fly doors. Write for illustrated Bulletin 54, showing hospital work exclusively.

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Aultman Children's Hospital, Canton, O.

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separated from nursing education. Robert Neff, director, University of Iowa Hospitals, in his paper, "The Cost of Nursing Education to the Hospital," published in the *American Journal of Nursing* for September, 1930, suggested "that the sum for student services be paid into the school of nursing budget to be used solely to pay for the maintenance and education of the nurse." This calls for a careful survey of student employment to evaluate services and salaries.

The Value of a Cost Study

Doctor Burgess, in the third report of the Committee on the Grading of Nursing Schools, is asking that a cost study be made by the chairman of the board, the hospital superintendent and the principal of the school, with this thought in mind: "Is your school costing or saving the hospital money?" She further suggests that if the hospital is losing money steadily it should change its methods and employ graduate nurses.

It is generally conceded that graduate nurses on general duty are the solution of the problem if both patient and nurse are to be considered and efficiency is to result. S. Lillian Clayton in her address before the Missouri State Nurses' Association in 1929 made this statement, "The science of efficiency is nothing but the most common sense way of doing a thing, and common sense is a matter of the mind and the mind is man."

In 45 per cent of our schools the students have been in the school longer than the superintendent of nurses. This is no doubt also true of instructors, supervisors and head nurses. In 38 per cent of the schools, the head of the school is present at meetings of trustees of the board when school matters are under discussion; 19 per cent are sometimes present; 43 per cent practically never attend. Sixteen per cent of our graduate staff have one or more years of college; 42 per cent have less than four years of high school; 85 per cent have no advanced professional experience. Advanced professional education for the graduate nurse is as essential as are improved standard methods in student nursing education. We must give the graduate time to grow and to have capacity for growth. Her enthusiasm must be kindled and nourished and her ardor undimmed. The status of the general floor duty nurse must be dignified. The opportunities for staff education are manifold. Groups must be divided for conferences in order that the duties and interests of each group may be given specific attention. Lecture courses may be established in relation to disease, to nursing care and to administration, encouragement given and arrangements made for attendance at nursing conventions and other meetings. The students' library may be offered for reference reading in connection with medical and administrative lectures. Especially should the general staff nurses be given opportunities to discuss and study in their own group. They must be made to feel their true worth, for the standard of nursing of the student body can be no higher than that of the general staff nursing group. Hospitals in cities where there are universities should make it possible for their graduates to take university courses.

The conferences should be held weekly or twice monthly depending upon the group and the problems involved. It is essential to have a joint conference once a month when all groups are brought together. It is important to vary the manner in which the time is spent in the conference. Special reports may be given, administrative problems discussed and teaching technique reviewed and demonstrated. The conferences afford a splendid opportunity to talk over state and national affairs related to nursing.

An excerpt recently reprinted from the report of the Subcommittee on Institutional Nursing to the joint boards contains a number of valuable suggestions. One of these suggestions is that general floor duty should be known as "general staff nursing" to provide a flexible service, and that the following improvements should be maintained: improvement of the nursing care of the hospital sick; improvement of the education of the student nurse; improvement of the nursing needs of the community; improvement of the welfare of the graduate nurse.

Educating the Nurse—An Obligation

Standards and terms of appointment are discussed with salary, maintenance, vacations and health service. It is further suggested that special or private duty be styled "special nursing" and that student nurses be no longer placed on special duty. Is it possible that there are still some who style themselves schools of nursing and yet place students on special duty and receive remuneration for the hospital?

It is cheaper to run a poor school than to employ graduate nurses. It seems a fact that hospitals and the public regard the suggestion that they pay for nursing service as a most unreasonable demand. What can we do about it? Take the public into our confidence. Do away with the old apprenticeship system. True, the patient comes first, but someone must accept the obligation for educating the student. It is a joint program. The objective of the hospital and the objective of the school are different, yet they are one.[1]

[1]Read at the meeting of the Minnesota Hospital Association, Duluth, June 22.

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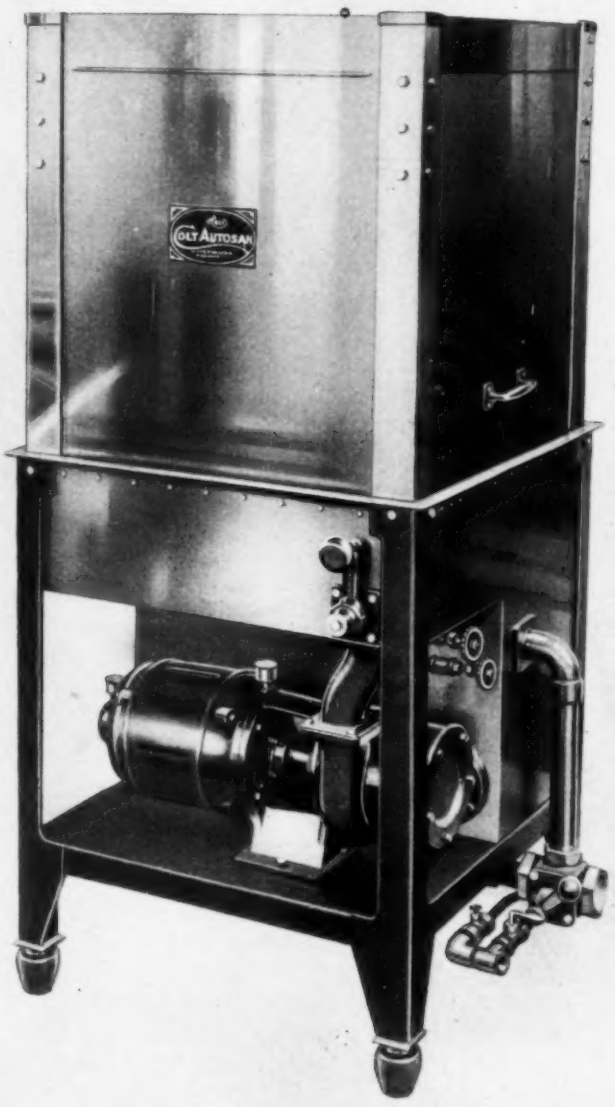

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FOOD SERVICE AND EQUIPMENT

A Series by KATHERINE MITCHELL THOMA, Dietitian, AND HERMAN SMITH, M.D.,
Superintendent, Michael Reese Hospital, Chicago

Why Food Facilities Should Be Inspected Regularly

NOW that we have discussed the daily inspection of food, we shall consider the question of the weekly inspection of food facilities. These facilities include kitchens, floor serving pantries and dining rooms.

Far more important than the minute inspection of the kitchen, or any portion of it, is the regularity of inspection. Inspections that are carried on regularly are of far greater importance than sudden, unexpected inspections. The regularity of inspection stimulates the proper esprit de corps on the part of all personnel who feel that if the dietitian and administrator have enough interest to look over each part of the premises, it is up to them as individual workers to take enough interest to see that these particular portions are kept up to standard. There is an old adage that no one can work as well as he who is proud of his work. If the personnel, therefore, can be made to feel that the executives of the hospital are interested in each worker's job, they will make every effort to give satisfaction. This is in contrast to the attitude of resentment that flares up when executives drop in at odd times in order, as it were, to "show up" the worker and to discover errors in technique. More errors in technique can, over a period of time, be discovered in intimate discussions of technique and of details of administration by the persons who are making the inspections.

A single inspection is practically useless. If one wishes to find out about a certain definite thing, it is better to inform the worker in the kitchen, or in the department that happens to be involved, that one is interested in learning how a particular function is followed through, and then to watch this technique on a number of occasions. Most persons are inherently honest, and they will actually carry out the technique as they think it should be done. In this way suggestions for bettering it can be made. This brings about a cooperative rather than an antagonistic spirit.

One will be greatly surprised to learn that his powers of observation are definitely restricted. Routine inspection repeated continuously will reveal definite errors that have been overlooked for comparatively long periods of time. After one has had experience with this for sometime he will be convinced that it is only by continuous repetition and discussion of the problems involved that proper progress and proper changes can be made. Unfortunately there is no such thing in this as a royal or rapid road to perfection. It again emphasizes the need of the cooperation of the administrator and the dietitian and the workers in the kitchen department in order to work out the collective problems.

How the Administrator Can Help

Nothing in this article is to be interpreted as suggesting that the administrator act as a guide or mentor to the cook or vegetable persons, or the ones who work out the details of actual preparation. These are technical jobs and are entirely within the realm of the dietitian. The administrator, however, can be of help in working out problems of handling finished products and of better methods of taking care of raw products.

It is interesting to see the development of the spirit of serious thought in conjunction with weekly inspections. When inspections are first started, or when there is an entirely new or outside person put in charge, the first attitude is either one of scoffing or of mild panic. This continues until the time the workers in the department realize that inspections are made, not only to see how things are going but to make possible a discussion of problems under actual working conditions. The workers themselves are stimu-

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lated to think their problems through more clearly and to bring up for discussion changes in methods. If they have the proper attitude, they will soon develop the habit of objective criticism of their own work. Usually they will have thought through and perhaps tried out new methods before they present them as theories. When a large number of personnel in any department can be stimulated to this attitude it seems to us that the best possible efforts are then being obtained from them.

It is needless to say how important weekly inspections are for discovering minor breaks in apparatus which, if left uncared for, would result in major difficulties and expense and for stimulating the maintenance department to repair those things that otherwise might go unrepaired. The need of paint, the efficacy of ordinary cleaning, the merits of certain cleaning materials, the cleaning and repair of the walls and floors and other details of good housekeeping are all uncovered in the weekly inspections. These become quite automatic after a time, and usually the workers in the kitchen will have anticipated many of the requests before inspection.

Again it should not be inferred that each weekly inspection of kitchens will bring out something of momentous importance. It will not, because if it did the whole organization would be in a state of continual chaos. Repeated inspections bring out minor points here and there which gradually work themselves into the consciousness of either the dietitian, the administrator or the person in charge of the kitchen, or all combined, with the result that a major change in technique is then established.

Inspecting the Floor Pantries

During the inspection of the floor serving pantries, as well as the kitchen and dining rooms, the administrator and dietitian should be accompanied by the person or persons actually in charge of the individual units. During the inspection of floor pantries, it is desirable although not essential that the nursing supervisor in charge of the nursing unit supplied by the floor pantries be present. These weekly inspections will afford an opportunity for having the dietitian, the nursing supervisor and the administrator meet informally to discuss among other things the actual reception of food by the patient. During these inspections, the question of actual tray service, menu reception and food quality can be reviewed. Again it should be emphasized that all these questions will not come up at each inspection, but some phases will usually bob up for discussion.

An example of the value of repeated routine inspections and particularly the discussion that goes on during them, is the solution, or the solution insofar as one hospital is concerned, of two definite and vexing problems. First, the question of the protection of food brought by patients' relatives and, second, the perennial question of coffee for patients. The hospital of which we speak meets the private delicacy situation by installing in each floor pantry ice box, small locked wire baskets or containers in which the individual delicacies are placed. The containers are then padlocked and the separate key for each box supplied to either the patient or his nurse.

Two Outstanding Problems

Comment may be made justifiably that there is no need of having weekly inspections to learn that food pilfering is a problem and that the solution of the problem is so easy that no real thought need be given to it. We agree with both of these criticisms. Nevertheless, it is a fact that in many hospitals criticisms regarding food pilfering have been going on for years, and in many the pilfering itself is still going on. To our minds, the administrator and frequently the dietitian are so far removed from the actual problem when they only hear complaints, and complaints often come through in decreasing numbers because a nurse has given up hope of ever being able to solve the problem, that the problem does not present itself in quite the concrete way that it does when recurring inspections bring forth a variety of bottles with labels ranging from "Keep off—this is mine" to "These olives have been counted" to "My patients would like at least a portion of this for themselves." These labels are the polite expressions of what both patients and nurses think about their losses. What most of them actually think would not look well in print.

The perennial coffee question is, frequently, when one hears of it at a desk, only an academic question. When, however, one has the question of coffee constantly repeated at both daily and weekly inspections, one finally attempts to strike out for some new solution. In the experience of one hospital, at least four or five different methods of coffee preparation and distribution to patients were tried, each without success. One learned of the failure of each successive method at these inspections. Finally the individual percolator system of coffee distribution was hit upon, and this, although it seemed fantastic at first, proved to be efficacious. Here again, it is perfectly possible that the percolator solution would have been found without the kitchen's having to try out four or five other methods. The actual fact is that it was, and it is our belief that without constant contact between the various persons involved, one would not have known of the failure of the other methods

Something the most critical patients will remember pleasantly

WHEN talking with the doctor, or with friends and relatives, what do patients say about the food?

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but might have been satisfied with a change instead of a solution.

The weekly routine inspection of dining rooms for personnel should be made by the dietitian and administrator together with the person in charge of the particular dining room, at times other than during the actual meal hours. It is assumed that both the dietitian and the administrator will be completely familiar with the conditions at meal hours as a result of their daily food rounds.

The center of interest in dining room inspection should, of course, be the serving room. Here again, discussion, repetition of detail and constant repetition will eventually result in the smoothing out of service and in economy of the food that is served.

A System of Breakage Control

It is obvious that the appearance of the dining room and the attractiveness of table service are major considerations in food satisfaction or dissatisfaction. Attention to these details will result in a more or less constant daily concentration of the workers on the same items with a definite bettering of service. The inspection of crockery and silverware inventory at these inspections will again bring into relief the practical problems concerned in the care of these two items. One may find that excessive breakage is caused by incorrect transportation methods rather than by dishwashing methods, or the reverse may be found to be true. Irrespective of the methods of correction, the mere discussion of these inventories in the dining rooms themselves and with the persons concerned will have a much better effect than the presentation of these reports over the executive's desk.

At this point, may we mention a system of breakage control that has worked fairly satisfactorily? From crockery breakage reports, one can, in a comparatively short length of time, arrive at what might be considered an irreducible minimum of breakage for a given unit. This average breakage takes care of ordinary accidents in dish handling and the breakage of cracked dishes. If one allows this amount a weekly average one can then present this fact to all the workers concerned with dish handling and have them collectively charged for all breakage over this amount. This system has worked because it has been seen by the workers that it is obviously fair. The workers will usually help to control that costly item of disappearance and theft. In conjunction with this system it is of course understood that periodic inventories of the dishes in this department must be taken.

In the discussion of service in personnel dining rooms, it must be pointed out that it is an error to be too definitely committed to any one orthodox system of service, either complete waitress service or complete cafeteria service in all dining rooms. While either one of these services may be the proper one, and perhaps the only one for any particular dining room, an intimate investigation of the problem in certain dining rooms may reveal the fact that better, more efficient and perhaps more economical service may be secured by a modification or a combination of both systems. For example, cafeteria service is usually considered as being cheaper than waitress service, but on detailed investigation one is frequently surprised to learn that waitress service or part waitress service may be instituted at certain times and in certain ways with little if any extra expense. In other places, the additional expense for waitress service may be justified in order to ward off the dissatisfaction which cafeteria service causes in some places.

During the weekly inspection of food facilities, the dietitian and administrator should jointly inspect the food storeroom with the person in charge.

Weekly inspections offer one of the easiest and most fruitful means of developing the proper type of cooperation and esprit de corps between all persons who are in any way connected with the food department. It makes each group understand that all groups involved are not only interested in the problems of the department but as a result of the contact of minds they realize that each group gains an intelligent understanding of all the problems. With this fact established, criticism and suggestions, both constructive and destructive, will be considered objectively rather than personally. When this fact is established in any organization, progress is then possible up to the limits of the intelligence of the workers.

Move to Change "Physical Therapy" to "Physical Medicine"

After a battle in the medical profession to abandon the term "physiotherapy" and substitute "physical therapy," a move is now being made to adopt what is considered an even better term, "physical medicine," according to the *Pennsylvania Medical Journal.*

At the time of the recent meeting of the American Medical Association, a new society, the American Society of Physical Medicine, was formed. The *British Journal of Actinotherapy and Physiotherapy* has changed its name to the *British Journal of Physical Medicine.*

The ? COFFEE ? Problem

If you have in your hospital a "*coffee problem*," the following recent incident will interest you.

In the short space of three months, the dietitian at a high grade hospital of considerable size had used *six* different blends of coffee—and she was still having trouble. The prices paid led us to believe that, in all probability, there were several good coffees among the six. But coffee blends differ, one from another, and a succession of quick changes was merely leading to a confusion of reports—and prolonged trouble.

The Solution:

Such a problem calls for two equally important procedures:

FIRST:—Select a *good* coffee offered by a highly reputable house. Let the representative of such a house help you make your selection. Pay a fair price, a price in accordance with the quality you desire. Use enough of that coffee to prove its quality—give it a fair trial.

SECOND:—Adhere to your choice, once you have made it. Nothing is more important than *uniformity* in coffee. Frequent changes break down that uniformity, and your problem remains unsolved. If you have selected a *good* coffee, why change to another?

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HOSPITAL EQUIPMENT AND OPERATION

Conducted by C. W. MUNGER, M.D.
Director, Grasslands Hospital, Valhalla, N. Y.

How Mechanical Aids Facilitate Record Keeping

By GEORGE P. BUGBEE
Office Manager, University Hospital, Ann Arbor, Mich.

THE value of mechanical as compared with manual recording of dictation is a controversial subject of discussion. It is true that mechanical dictating equipment is still something of an innovation and that many are hesitant about using it to any great extent. Yet at the University Hospital, Ann Arbor, Mich., experience has amply proved the value of such equipment in connection with the central record office and the unit record system.

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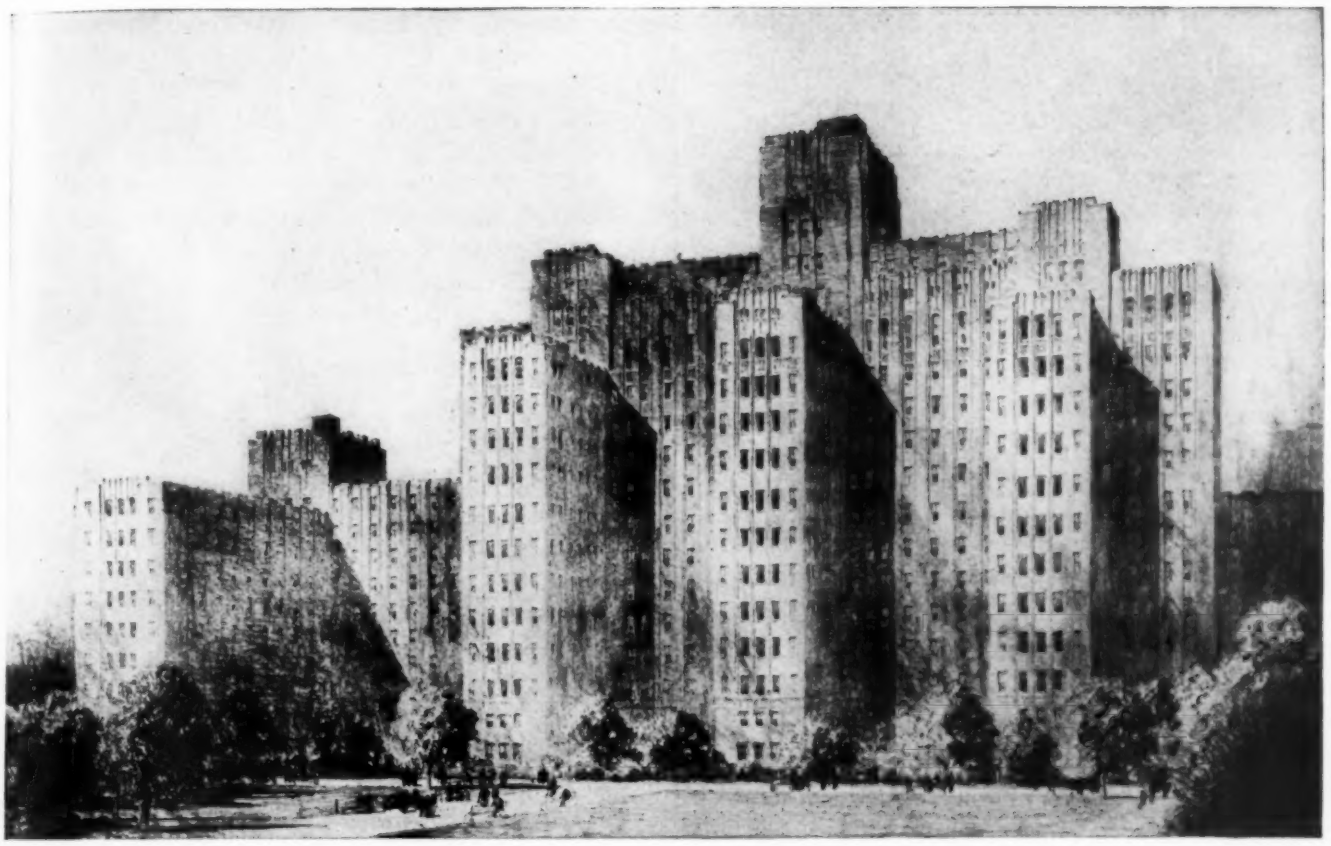

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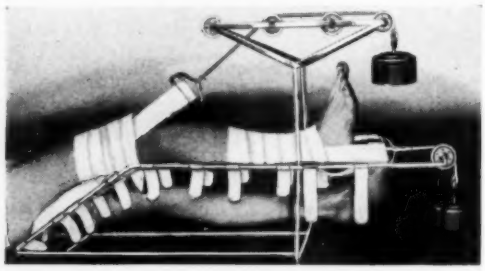

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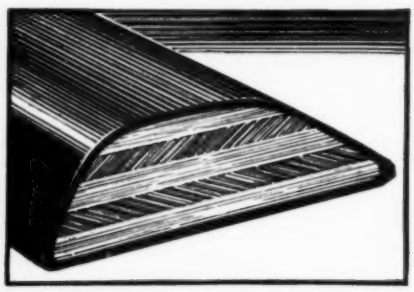

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To maintain a stenographic staff under the direct control of each professional service would not have been satisfactory. Therefore the supervision of all clinic stenographers and clerks was centralized in the central record office and became the responsibility of the record librarian. The results have been satisfactory to both the hospital and the professional staff.

The plan has many advantages over the previous decentralized organization. In the first place supervision controlling such problems as hours of

This out-patient department physician is dictating his examination notes directly into the recording machine.

work, production per worker and salary schedules is much more efficient when the supervisor has that responsibility as one of his primary functions. Naturally the professional man does not have the experience that would enable him to judge the work of the clerical staff, nor is this a matter of prime interest to him. This lack of experience and interest does not have a beneficial effect on the efficiency of the organization as a whole.

How Workers Are Mobilized

In the second place the clerical work varies greatly between clinics and within an individual clinic. Central control of clerical work meets this problem by the mobilization of all workers. One individual may at times serve two clinics, or the less busy service may for a time assume through its stenographers a part of the work of a service with an unusual load. Thus individual performance is increased, and inequalities in the distribu-

The spotlight may play on a few whose names are forever after written in large letters. But heroic figures alone cannot make history. In the background, dimly seen or unnoticed, must be thousands submerged in humble service.

The tomb of Folco Portinari, philanthropist, founder of Santa Maria Nuova Hospital, is still a hallowed spot in Florence.

No shrine marks the resting place of Mona Tessa, his servant. Her name is all but forgotten. Expecting neither praise nor recognition, she gave endless days in nursing and menial tasks about the hospital, counting it enough to be permitted a share in caring for the sick.

The unsung life of Mona Tessa is the epitome of the truly heroic spirit that has carried the profession of Nursing on.

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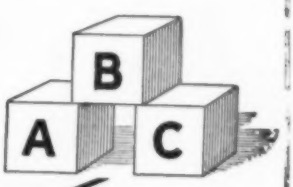

Alphabetically

OVER one hundred hospitals in the United States are now using the **Alphabetical Loose-Leaf System of Cross-Indexing.** It is based on **Ponton's Nomenclature** which is a simple alphabetical listing of Disease and Operation terms, officially endorsed by the American College of Surgeons and the American Hospital Association. The system is **adaptable to large and small hospitals** because of its flexibility. The low cost of installation and low upkeep will appeal to thrifty hospital executives.

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ANNUAL REPORTS

A PRINTED Annual Report presenting to the public a brief, interesting statement of *what the hospital has accomplished during the year* is not only desirable but essential.

¶ Such a report has great publicity value if properly written and produced. It should be the medium through which members of the community may be interested in the work of the hospital.

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tion of work between the various employees is minimized.

The installation of mechanical dictating and transcribing machines is an important step in the centralization of stenographic work. Central supervision is desirable and without mechanical aids the centralization of the clerical force in one location is impossible.

Centralizing the Work

In the University Hospital this type of equipment has been installed wherever practicable. However, while all stenographic employees in the professional departments are employees of the central record office, certain ones work in the individual clinics doing clerical and secretarial work. Nevertheless the major portion of the stenographic work is performed in the central transcribing office, recording machines being distributed throughout the various clinics and wards.

The professional members of the staff use the recording machines in both the out-patient and the in-patient departments. In the out-patient departments the physician may dictate the history and return visit notes directly or he may, at certain periods of the day, dictate from notes that he has made.

On most in-patient wards dictating machines are available and are used by the physicians to write progress notes, case summaries and reports to referring physicians. The greater number of the medical records are recorded in this way. For the professional staff, particularly for the intern on whom a great amount of the record work devolves, it is convenient to have the recording machines available at any time and in a convenient place.

A messenger from the central record room makes daily trips to each recording machine to collect all dictated records and to provide fresh cylinders at each location. The central transcribing room is organized so that, as far as possible, each operator transcribes for the same group each day. Actual distribution is dependent, however, on the work load. Much of the stenographic work for the medical records need not be transcribed within a few hours after dictation. The various services using the machines differentiate between work that is urgent and work that may be delivered in a reasonable time. In this way adequate service is rendered.

The installation of mechanical dictating and transcribing equipment has contributed greatly to the efficiency of the stenographic workers by making possible a greater degree of centralization than would have been possible in any other way. Demands for additional equipment by the professional staff indicate their appreciation of its value within the hospital organization.

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A. N. A. Chooses San Antonio for Biennial Meeting

The American Nurses' Association will hold its biennial meeting in San Antonio, Tex., April 11 to 15. The national committee on arrangements of the three nursing organizations has already drawn up the program for the joint sessions. Topics that will be discussed will include the following: Keynotes on Progress in Nursing; Nursing at the Crossroads; Next Steps in Nursing; Mental Hygiene Through the Profession.

Hospitalization of Veterans Subject of A. H. A. Questionnaire

The American Hospital Association is seeking from hospitals throughout the country information on the beds available to care for sick and disabled veterans. This is in line with the association's recent action to ask the Government to make use of the beds in civilian hospitals for veterans who otherwise must wait until new Government hospitals are built before receiving care.

The communication to hospitals cites in full the resolutions adopted by the American Hospital Association with regard to the hospitalization of veterans in nongovernmental institutions and asks for an immediate return of the questionnaire sent.

The following questions are asked the superintendents: (1) Is your hospital a general hospital? If a special hospital, what class of patients does it admit? (2) How many beds under normal conditions could you provide for the care of veterans? (3) What rate per day would you charge for your hospital service? (4) If the Government desires, could you provide a separate ward or wards for the care of veteran patients, with your present plant? If you could, what would be the total bed capacity of these wards?

Hospitals and Homes Group to Meet February 10-11

The National Methodist Hospitals, Homes and Deaconess Association will hold its fourteenth annual convention in Chicago, February 10 and 11.

The president of the association, Dr. John G. Benson, associate superintendent, Methodist Episcopal Hospital, Indianapolis, will preside at the opening session and give the presidential address. Other speakers at this session will include: Dr. John Thompson, pastor, Methodist Temple, Chicago; Bishop Edgar Blake, Indianapolis; the Rev. Charles C. Jarrell, secretary, General Hospital Board, Methodist Episcopal Church,

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• Floor scrubbing as a maintenance method is hopelessly out-of-date. The modern scientific method is the Johnson Wax method—that keeps floors protected, preserved over the longest possible period of years—keeps them *beautiful* during their entire lifetime—at the least cost of maintenance. Once they are properly waxed they are easy to keep up.

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Well, the student uniforms of yester-year are rendered just as out-of-date as the Nickelodeon by the new MARVIN-NEITZEL Sanforized uniforms.

Sanforized uniforms are made to fit perfectly at the outset—no "allowances" are necessary. The garments retain their original size after repeated launderings—free from binding. Better appearance, greater comfort and longer wear result.

Hundreds of hospitals tested and proved the advantages of MARVIN-NEITZEL Sanforized uniforms in actual service. They proclaimed them the biggest improvement in recent years.

We suggest that you write us or ask your MARVIN-NEITZEL representative for information and booklet regarding Sanforized Uniforms. Also request information regarding the simple MARVIN-NEITZEL plan of outfitting student nurses. We shall be glad to quote upon any special uniform requirements which you may have.

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HOSPITAL GARMENTS and NURSES' APPAREL

South, Atlanta, Ga.; Dr. C. Rufus Rorem, secretary, Julius Rosenwald Fund, Chicago. The secretary of the association, Guy M. Hanner, superintendent, Beth-El General Hospital, Colorado Springs, Colo., and the treasurer, the Rev. Bascom Robbins, Kansas City, Kan., will both present their reports at this meeting.

The afternoon will be devoted to group conferences. Speaking at the conference on hospitals will be: the Rev. John E. Lander, Wesley Hospital, Wichita, Kan.; Dr. O. J. Carder, superintendent, Missouri Methodist Hospital, St. Joseph, Mo.; Dr. C. S. Woods, superintendent, St. Luke's Hospital, Cleveland; Robert A. Nettleton, superintendent, Iowa Methodist Hospital, Des Moines; Blanche Fuller, superintendent, Nebraska Methodist Episcopal Hospital, Omaha; Alice Thatcher, superintendent, Fort Hamilton Hospital, Hamilton, Ohio; Dr. F. G. Fowler, superintendent, White Cross Hospital, Columbus, Ohio. G. T. Notson, superintendent, Methodist Hospital, Sioux City, Iowa, will preside.

The annual banquet will be held in the evening with Bishop Charles Mead, Denver, Colo., giving the principal address.

The main addresses of the Thursday morning session will be given by the Rev. John A. Diekmann, president, Bethesda Hospital, Cincinnati, and Dr. N. E. Davis, secretary, Board of Hospitals, Homes and Deaconess Work, on "The Future of Methodist Philanthropies," and, "A Discussion of Proposed General Conference Legislation."

The afternoon will be given over to reports on group conferences and the meeting will end with an address, "Toward the Future," by the Rev. Charles C. Jarrell, Atlanta, Ga.

Cost of Medical Care Not Excessive Secretary Wilbur Says

"The total cost of medical care in the United States approximates 3 to 4 per cent of the total national income of the people, and does not constitute an excessive amount," Dr. Ray Lyman Wilbur, secretary of the interior, declared in a talk December 29 before members of the social science societies in session in Washington.

Doctor Wilbur, who is chairman of the Committee on the Costs of Medical Care, said in part:

"The average expenditures for medical care increase as the income of the family increases. Only in part is this due to higher costs per unit of service; wealthy persons actually receive a larger number of services. Much of the present expenditure is unwisely spent. The expenditures as ascertained in the community surveys show a relatively large percentage going to drugs and medicines and a substantial percentage for substandard service.

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HOSPITAL GARMENTS
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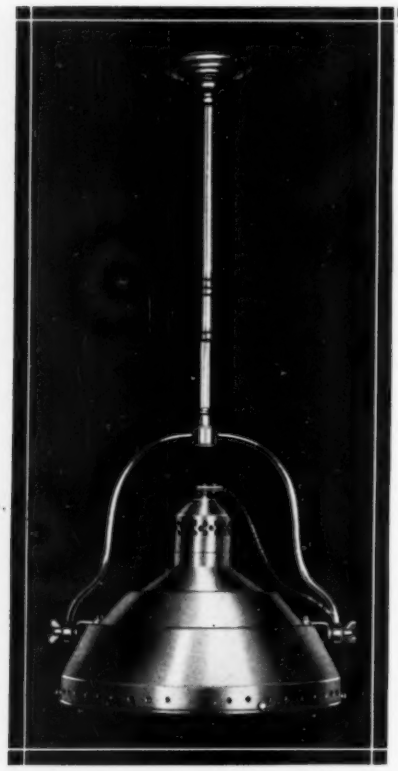

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Extremely valuable for use in the diagnosis of skin diseases; for correct distinction of color, hue and shade of inflamed and infected tissues are made readily discernible.

Of utmost necessity to determine correct color value in pathological lesions and tissues during operations, especially in emergency cases.

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"Several important studies are soon to be published. Among them are one on the costs of medicine, another on midwives, chiropodists and optometrists, and a third on the healing cults. The committee will terminate its work December 31, 1932."

Hospital and Hotel Housekeepers Hold Profitable Meeting

With Honora Carney, executive housekeeper, Hospital for Joint Diseases, New York City, as hostess, the New York chapter, National Executive Housekeepers' Association, a gathering of nearly one hundred executive women from hotels, hospitals and clubs met recently and enjoyed a splendid practical and educational program.

The first speaker of the evening was Dr. J. J. Golub, superintendent, Hospital for Joint Diseases, who outlined entertainingly and graphically the fundamental differences and similarities of the hospital housekeeper's work and that of the executive in the hotel or club.

The second speaker was H. R. Van Saun, Libbey Blanket Company, who gave an instructive talk on the manufacture of blankets, which included information on how to test the strength of blankets and on proper laundry methods. He recommended for hospital and hotel use a 50 per cent pure wool and 50 per cent cotton warp blanket.

Montefiore Hospital Discontinues Its School of Nursing

The school of nursing of the Montefiore Hospital for Chronic Diseases, New York City, which evolved ten years ago from the school for attendants, will close its doors early in February according to a resolution recently adopted by the board of trustees which explains that the step was taken because of "existing conditions in the community."

The Montefiore School of Nursing came into being in response to a definite demand for a certain type of nurse. It was organized primarily to train nurses for service in a chronic hospital, the surplus graduates being available for private duty with similar cases. It was also felt that the chronic patient was excellent teaching material for the student nurse and the size of the institution (it now has 929 beds in both city and

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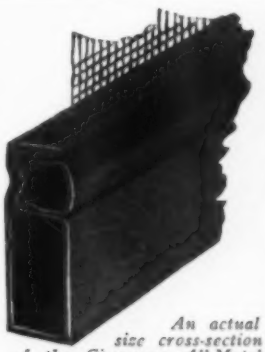

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2. Noiseproof when closed.
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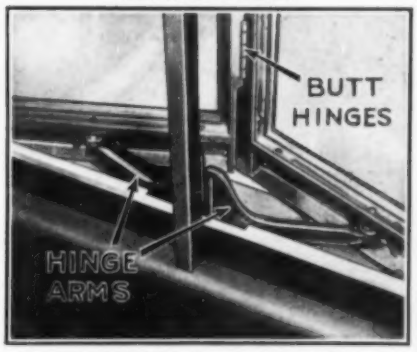

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The CHASE HOSPITAL DOLL and *The* CHASE HOSPITAL BABY, because of their inherent durability and because they permit such great flexibility and wide latitude in the demonstrations and practice of medical, surgical, and hygienal principles, are in daily use all over the world in Hospitals, Nurses' Training Schools, Home Nursing Classes, Baby Clinics, Mothers' Classes, and by Visiting Nurses and Baby-Welfare Workers. They are standard and necessary equipment.

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